ELEKTROTECHNICKÝ ZKUŠEBNÍ ÚSTAV

ELECTROTECHNICAL TESTING INSTITUTE - CZECH REPUBLIC
ELEKTROTECHNISCHE PRÜFANSTALT - TSCHECHISCHE REPUBLIK
INSTITUT ELECTROTECHNIQUE D'ESSAIS - RÉPUBLIQUE TCHÈQUE
ЭЛЕКТРОТЕХНИЧЕСКИЙ ИСПЫТАТЕЛЬНЫЙ ИНСТИТУТ - ЧЕШСКАЯ РЕСПУБЛИКА

Pod lisem 129/2, 182 00 Praha 8, Troja

CERTIFIKÁT

č.: 1230430

Výrobek: Fotoluminiscenční znak

Typ: GlowStar FTL-150

Objednatel: TRAIVA, s.r.o.
Pohraniční 678/104, 702 00 Ostrava - Moravská Ostrava, Česká republika

Výrobce: TRAIVA, s.r.o.
Pohraniční 678/104, 702 00 Ostrava - Moravská Ostrava, Česká republika

Výrobní místo: TRAIVA Safety
Pohraniční 2911/13b, Ostrava, 70300, Česká republika

Obchodní značka:

Výsledky zkoušek jsou uvedeny v protokolu č.: 231658-01/01 ze dne: 19.09.2023

Vzorek zkoušeného výrobku je ve shodě s požadavky:
ČSN ISO 17398:2004 čl. 5.5, 7.11.5.1

Jiné údaje:

Certifikát byl vydán na základě splnění požadavků certifikačního schématu „EZÚ certifikát" a na základě smlouvy č. 231658 mezi objednavatelem a Elektrotechnickým zkušebním ústavem.

Platnost certifikátu je omezena do: 25.09.2026

26.09.2023

V Praze dne

Mgr. Miroslav Sedláček
Vedoucí certifikačního orgánu

elektrotechnický zkušební ústav ezú Pod lisem 129/2, 182 00 Praha 8, Troja - 1 -

razítko

* C E R / 1 2 3 0 4 3 0 *

231658-01

ezú elektrotechnický zkušební ústav

Elektrotechnický zkušební ústav, s. p.
Pod lisem 129/2
182 00 Prague 8 - Troja

TEST REPORT

Test Report No.: 231658-01/01 Issued: 19. 9. 2023

Name of product:	**Photoluminescent sign**
Type of product:	**GlowStar FTL-150**
Ratings:	-
Serial number:	-
Manufacturer:	**TRAIVA, s.r.o.** Pohraniční 678/104, 702 00 Ostrava - Moravská Ostrava, Czech Republic
Production site:	TRAIVA Safety, Pohraniční 2911/13b, 703 00 Ostrava, Czech Republic
Ordering firm:	**TRAIVA, s.r.o.** Pohraniční 678/104, 702 00 Ostrava - Moravská Ostrava, Czech Republic
Number of tested samples:	3
Samples submitted on:	6. 9. 2023
Location of testing:	Elektrotechnický zkušební ústav, s. p.
Tests performed	**from** 11. 9. 2023 **through** 19. 9. 2023
Other data:	-
Tested according to:	ČSN ISO 17398:2004 čl. 5.5, 7.11.5.1

Compiled by: Zdeněk Dvořák

elektrotechnický zkušební ústav ezú -8- zkušební laboratoř

Approved by: Lukáš Burda
Testing laboratory technical manager

No. of pages: 4 No. of annexes: 0 No. of annexes pages: 0

Description of measured samples

Photoluminescent signs with long phosphorescence period were delivered for testing.
Type: GlowStar FTL-150.

Testing

Photopic luminance measuring on the photoluminescent sign was performed according to the ČSN ISO 17398 cl. 7.11.5.1.

Customer delivered three samples of photoluminescent sign with dimensions suitable for photopic luminance measuring. Samples were conditioned according to cl. 7.11.2 and 7.11.3 before the testing. Conditions in accordance with cl. 7.11.5.1 for excitation light conditions for classification purposes.

Luminance measurement was performed by telephotometric method according to the cl. 7.11.6.2 using digital luminance meter. The luminance meter recorded value of measured luminance in 2 min., 10 min., 30 min., 60 min., after removing excitation light source - the end of exposure. The evaluated area of the test sample was diameter of min. 35 mm.

Photometric performance

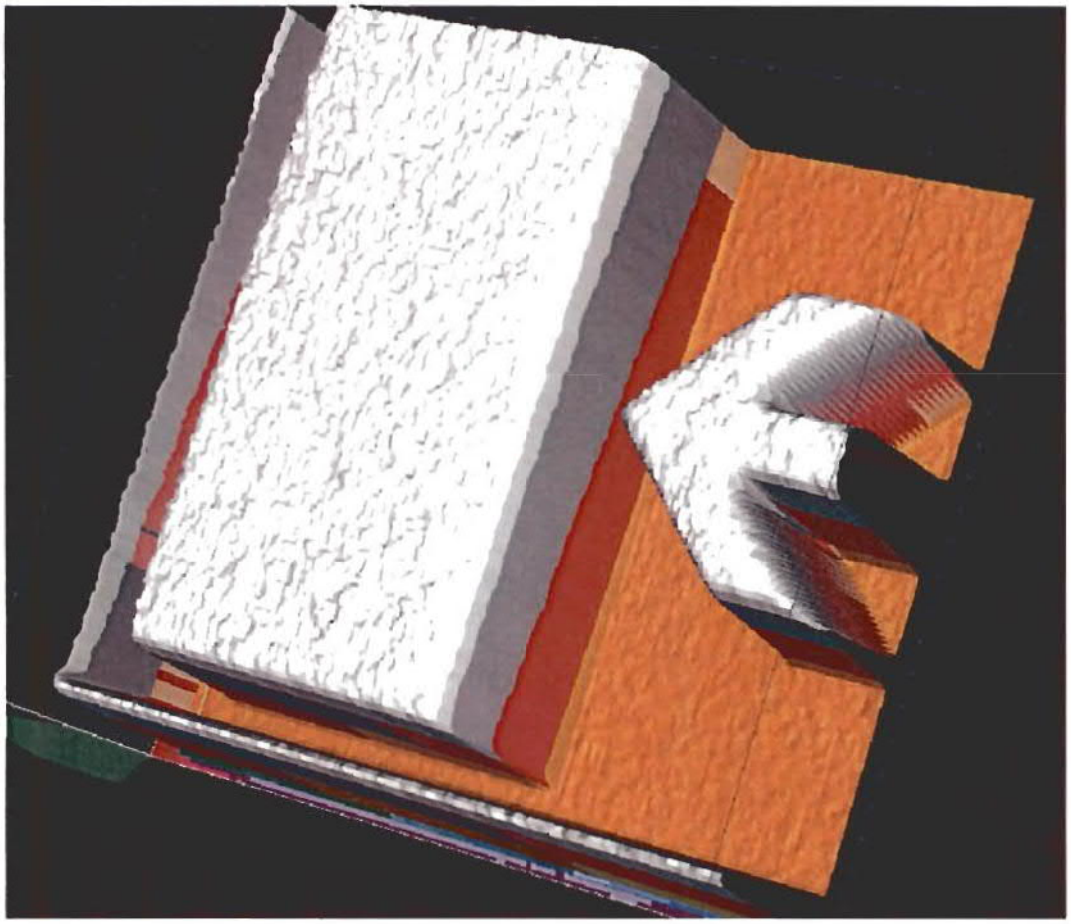
Measured values:

a) Exposure to xenon lamp with illuminance of sample 1000 lx.

Sample No.	Exposure time: 5 min.				Comment
	luminance (mcd/m²)				
	after 2 min.	after 10 min.	after 30 min.	after 60 min.	
-	**690**	**140**	**45**	**20**	**Required by cl. 5.5 class C**
1	939	179	56	26	News samples
2	1024	190	55	24	
3	980	190	59	26	
average	**981**	**187**	**57**	**25**	

The measured signs comply with the requirements of cl. 5.5 of ČSN ISO 17398 class C.

Luminance uniformity on the photoluminescent sign.



Used measuring equipment: Luminance meter LumiCam 1300 e. no. 110170
Laser meter LEICA D-3 e. no. 551425
Stopwatch Jugnghans e. no. 10701
Illuminance meter LMT POCKET LUX 2 e. no. 700611

Compiled by: Zdeněk Dvořák
Date: 19. 9. 2023

The end of the test report

ezú elektrotechnický zkušební ústav

Elektrotechnický zkušební ústav, s. p.
Pod lisem 129/2
182 00 Prague 8 - Troja

TEST REPORT

Test Report No.: 231659-01/02 Issued: 25. 9. 2023

Name of product:	**Photoluminescent sign**
Type of product:	**GlowStar HiGlow FTL-H 450**
Ratings:	-
Serial number:	-
Manufacturer:	**TRAIVA, s.r.o.** Pohraniční 678/104, 702 00 Ostrava - Moravská Ostrava, Czech Republic
Production site:	TRAIVA Safety, Pohraniční 2911/13b, Ostrava, 70300
Ordering firm:	**TRAIVA, s.r.o.** Pohraniční 678/104, 702 00 Ostrava - Moravská Ostrava, Czech Republic
Number of tested samples:	3
Samples submitted on:	8. 8. 2023
Location of testing:	Elektrotechnický zkušební ústav, s. p.
Tests performed	**from** 21. 9. 2023 **through** 25. 9. 2023
Other data:	-
Tested according to:	ČSN ISO 17398:2004 Flame resistance test - cl. 7.7.3, 7.7.4

Compiled by: Lukáš Burda

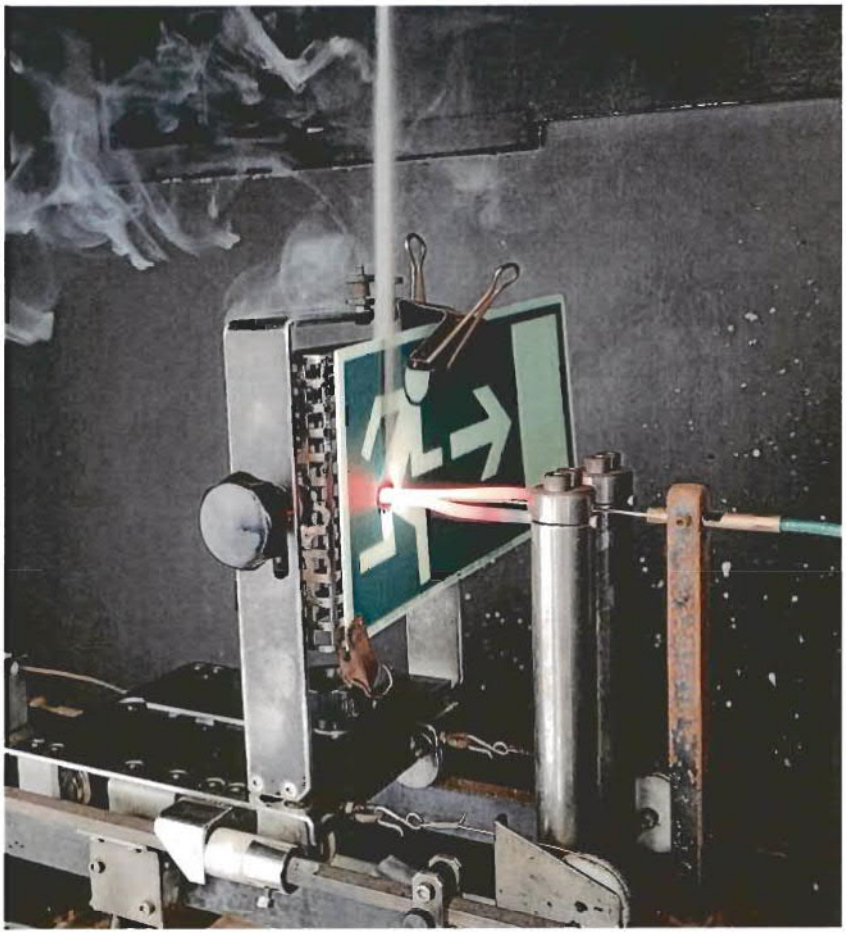
elektrotechnický zkušební ústav ezú -4-

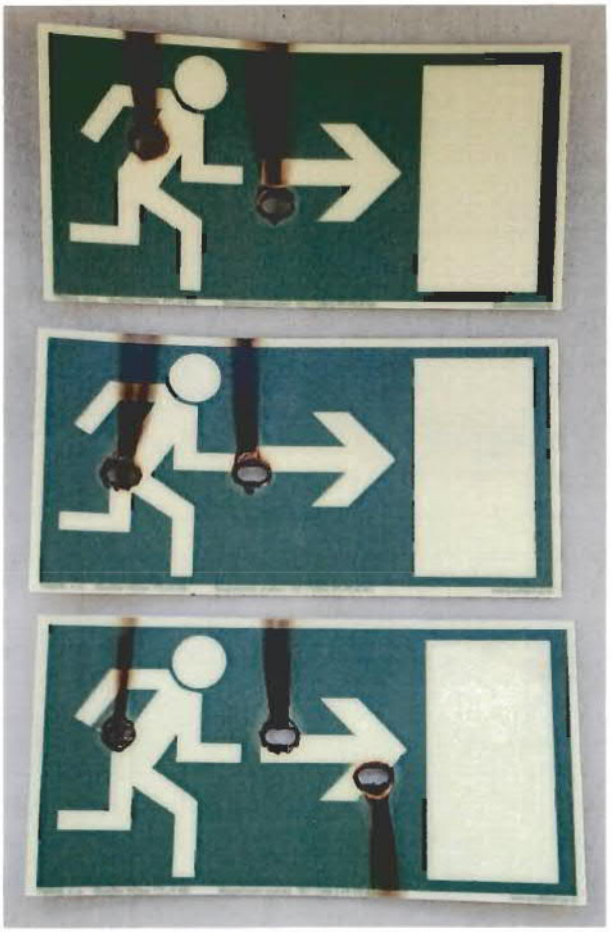
Approved by: Zdeněk Dvořák
Testing laboratory technical manager

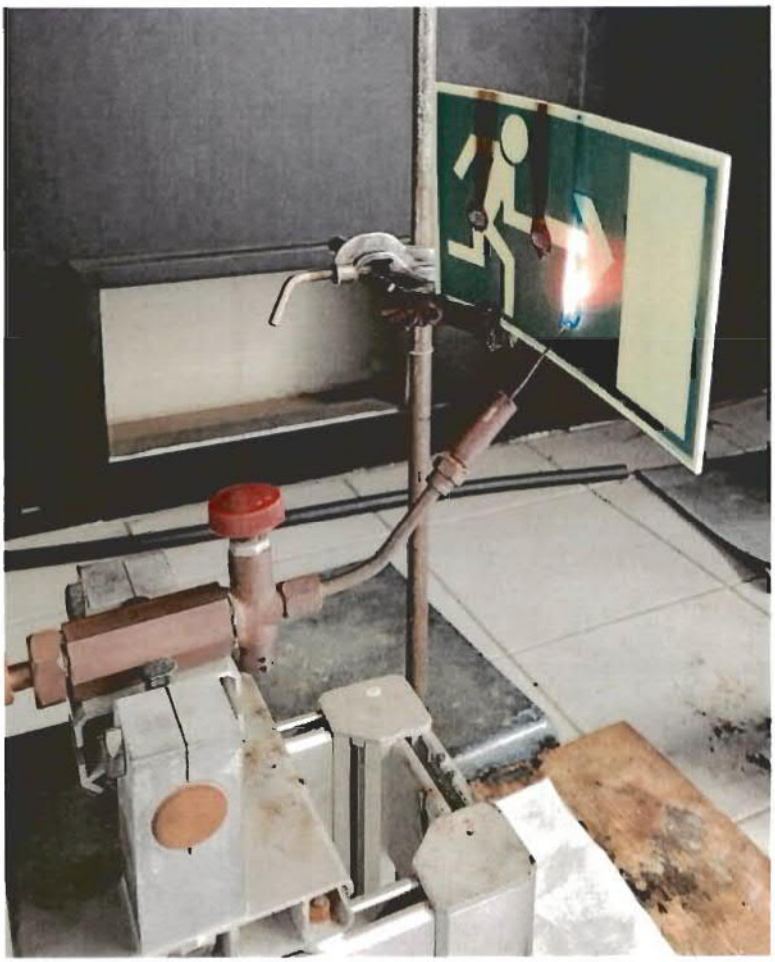
No. of pages: 4 No. of annexes: 0 No. of annexes pages: 0

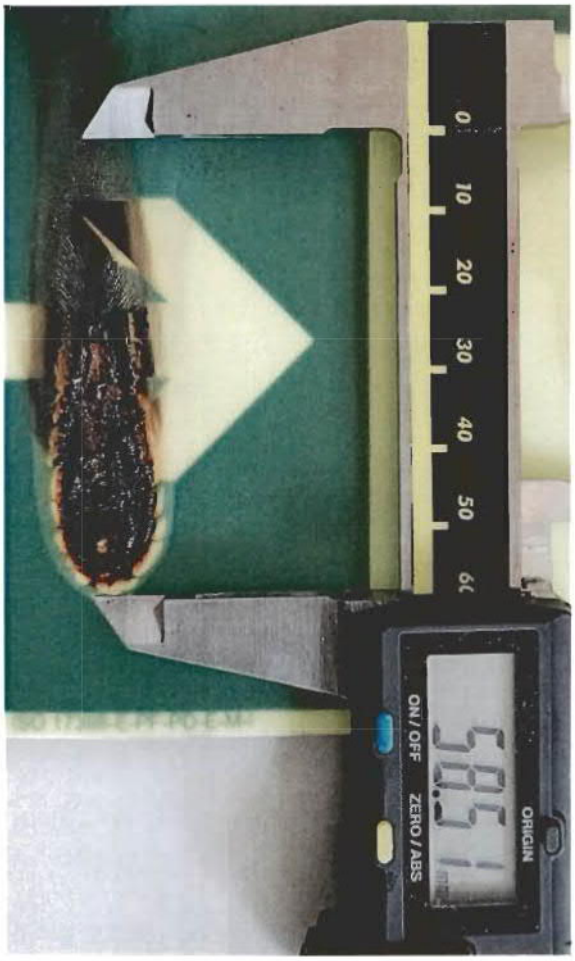
ČSN ISO 17398:2004			
Clause	Requirement + Test	Result - Remark	Verdict
14	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		
7.7.3	**Glow-wire test**		-
	The front faces of three safety signs shall be subjected to a glow-wire test in accordance with IEC 60695-2-11, at a test temperature of 850 °C. Each sign shall be tested twice on the same face, but care shall be taken that any deterioration caused by previous tests does not affect the result of the second test made. The test equipment to be used shall be as described in IEC 60695-2-10.		-
	Any flame or glowing of the specimen shall extinguish within 30 s of withdrawing the glow-wire, and any burning or molten drop shall not ignite a single layer of capacitor tissue paper as defined in ISO 4046-4:2002, 4.29, spread out horizontally (200 ± 5) mm below the specimen.	No flames, no molten drops. The glow was extinguished within 30 seconds.	P
7.7.4	**Flame retardance test – according to IEC 60092-101**		-
IEC 60092-101 4.7	The flame-retardant material shall comply with the needle flame test of IEC 60695-11-5 according to the following specifications:		-
	5 times for 15 s each time. The interval between each application shall be 15 s, or 1 time for 30 s	1 times for 30 s was selected	-
	The front faces of three safety signs shall be subjected to a glow-wire test in accordance with IEC 60695-2-11, at a test temperature of 850 °C. Each sign shall be tested twice on the same face, but care shall be taken that any deterioration caused by previous tests does not affect the result of the second test made. The test equipment to be used shall be as described in IEC 60695-2-10.		-
	Additional acceptance criteria to those specified in IEC 60695-11-5: the burnt out or damaged part of the specimen shall not be more than 60 mm long.	No flames, no molten drops. The glow was extinguished within 30 seconds. Damaged part is 58.5(8) mm long.	P

Photos:








0
10
20
30
40
50
ON / OFF
ZERO / ABS
ORIGIN

Used equipment:
Needle flame test apparatus and Glow wire test apparatus no. 00110195
Stopwatch Prisma 200 no. 551705

Measurement uncertainty is not applied when providing statements of conformity in accordance with IEC Guide 115:2023, cl. 4.3.3. Measured values and measurement uncertanty is expresed according to ISO 80000-1:2022 cl. 7.2.4.

Compiled by: Lukáš Burda
Date: 25. 9. 2023

The end of the Test Report