REPUBLIC OF BULGARIA
Executive Agency
Bulgarian Accreditation Service

Signatory to the EA Multilateral Agreement in this field

ORDER

№ A 97

Sofia, 07.03.2024

Pursuant to Art. 10, para. 1, item 2 and Art. 20, para. 6 of the Law on National Accreditation of Conformity Assessment Bodies and item 4 of the BAS QR 2 Accreditation Procedure, in connection with an open procedure reg. № 24-ЛИК/19.07.2023, assessment report reg. № 24-ЛИК/4/В/23.10.2023 and Statement of the Accreditation Commission reg. № 24-ЛИК/В/19.02.2024, I hereby

ACCREDIT

Scientific, Research, Testing and Calibration Laboratory for Lighting Technique at Technical University, Sofia

Management and laboratory address:
1797 Sofia, 8 St. Kliment Ohridski Blvd.

To perform testing of:

Type of the scope: *flexible***			
№	**Tested products**	**Type of test / characteristic**	**Testing methods (standard /validated method)**
1	**2**	**3**	**4**
1	1. LIGHT SOURCES 1.1. Incandescent lamps 1.2. Halogen filament lamps 1.3. Mercury gas discharge lamps 1.4. Sodium gas discharge lamps - low and high pressure 1.5. Metal halogen discharge lamps 1.6. Car Lamps 1.7. Luminescent lamps - tubular and compact 1.8. Different others. types of lamps (such as compact LED lamps, tube light-emitting diodes,	Power	БДС EN 13032-1, cl. 5.3, table 2 БДС EN 13032-4, cl. 4.3 БДС EN 60809 cl. 4.8 and Annex C CIE Publication № 121
2		Electrical current	БДС EN 13032-1, cl. 5.3, table 2 БДС EN 13032-4, cl. 4.3 БДС EN 60809 cl. 4.8 and Annex C CIE Publication № 121
3		Voltage	БДС EN 13032-1, cl. 5.3, table 2 БДС EN 13032-4, cl. 4.3 БДС EN 60809 cl. 4.8 and Annex C CIE Publication № 121
4		Luminous flux	БДС EN 13032-1, cl. 5.5, cl. 6.1.2, cl. 6.1.3, table 3 БДС EN 13032-4, cl. 6.2 БДС EN 60809, Annex C
5		Light intensity	БДС EN 13032-1, cl. 5.4 and table 2 БДС EN 13032-4, cl. 6.2
6		Brightness, overall	БДС EN 13032-1, cl. 5.6 and table 2

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Type of the scope: *flexible***			
№	**Tested products**	**Type of test / characteristic**	**Testing methods (standard /validated method)**
1	**2**	**3**	**4**
	light-emitting retrofit)	brightness	БДС EN 13032-4, cl. 6.7
7	1.9. Special lamps	Resistance to increased electromotive voltage	БДС EN 60432-1, cl. 2.9, Annex E
8		Strength of bolt fastening	БДС EN 60432-1, cl.2.5 and tables 3 a nd 4; Annex C БДС EN 60968, cl. 9
9		Electrical insulation resistance of the socket	БДС EN 60432-1, cl. 2.6; Annex A БДС EN 61195, cl. 2.4
10		Lamp heating	БДС EN 60432-1, cl. 2.4, table 2, Annex K БДС EN 60968, cl. 10 БДС EN 60969, Annex A БДС EN 61195, Annex B БДС EN 60360
11		Flashing time	БДС EN 60188, cl. 1.4, Annex A and B БДС EN 61167, cl. 4.5 БДС EN 60969, Annex A
12		Coordinates of color	БДС EN 60188, cl. 1.4.7, Annexes B and C БДС EN 61167, cl. 4.5 БДС 8.882, repealed but not replaced for requirements and methods БДС EN ISO 11664-3 CIE Publication № 15
13		Light Efficiency (Energy Efficiency Class)	БДС EN 50285, cl. 6 Regulation (EC) № 244, Annex III
14	1.10. Light-emitting diodes	Luminous flux	БДС EN 13032-1, cl. 5.5, cl. 6.1.2, cl.6.1.3, table 3 CIE Publication № 127
15		Light intensity	БДС EN 13032-1, table 2 CIE Publication № 127
16		Coordinates of color	БДС EN ISO 11664-3 CIE Publication № 15 БДС 8.882, repealed but not replaced for requirements and methods CIE Publication № 127
17		Work temperature	CIE Publication № 127
18	2. LIGHTERS (including LED luminaries):	Electrical insulation resistance	БДС EN 60598-1, cl. 10.2
19	2.1. Fixed lights	Electrical insulation strength	БДС EN 60598-1, cl. 10.2

Type of the scope: *flexible***			
№	**Tested products**	**Type of test / characteristic**	**Testing methods (standard /validated method)**
1	**2**	**3**	**4**
20	for general lighting 2.2. Built-in luminaires 2.3. Street and road lighting fixtures 2.4. Portable general purpose luminaires 2.5. Projectors 2.6. Lamps with incandescent lamps incorporating transformers or converters 2.7. Portable lighting for parks 2.8. Hand-held luminaires 2.9. Portable luminaries, attractive for children 2.10. Photo and cinema lamps (non-professional) 2.11. Stage lighting, TV movie studios and cinema studios (indoor and outdoor installation) 2.12. Illuminators for emergency lighting 2.13. Light garlands 2.14. Ultra low voltage lighting systems with incandescent lamps 2.15. Luminaires with limitation of temperatures on the surface of the housing 2.16. Lighting for use in hospital and health care facilities 2.17. Lighting fixtures 2.18. Special lighting fixtures 2.19. Lighting for motor vehicles	Light distribution	БДС EN 13032-1, cl. 5.4, cl. 5.7, cl. 5.8, cl. 6, cl. 7, cl. 8, tables 2, 3 and 4, Annexes A, B БДС EN 13032-4, cl. 6.5
21		Light intensity	БДС EN 13032-1, cl. 5.4 and table 2 БДС EN 13032-4, cl. 6.5
22		Efficiency coefficient (without light-emitting diodes luminaires)	БДС EN 13032-1, cl. 5.5
23		Heating of various items	БДС EN 60598-1, cl. 12.4 and tables 12.1 and 12.2
24		Temperature of the supporting surface	БДС EN 60598-1, cl. 12.4 and tables 12.1 and 12.2
25		Mechanical strength	БДС EN 60598-1, cl. 4.13.1, 4.13.2; table 4.3
26		Mechanical strength of the hanger	БДС EN 60598-1, cl.4.14.1, cl. 4.14.2
27		Roll resistance	БДС EN 60598-1, cl. 4.4.14
28		Length of insulating distances on the surface of the insulation and through the air	БДС EN 60598-1, cl. 11.2, table 11.1
29		Protection against direct contact	БДС EN 60598-1, cl. 8.2.1, cl. 8.2.5 БДС EN 60529
30		Protection against indirect contact	БДС EN 60598-1, cl. 7.2.1, cl. 7.2.8, cl. 7.2.11
31		Ability to place on combustible material	БДС EN 60598-1, cl. 12.5 and table 12.3
32		Illumination	БДС EN 12464-1,2, cl. 6.1
33		Overall brightness	БДС EN 13032-1, cl. 5.6 and table 2 БДС EN 13032-4, cl. 6.7
34		Electricity	БДС EN 13032-1, cl. 5.3, table 2 БДС EN 13032-4, cl. 4.3
35		Power	БДС EN 13032-1, cl. 5.3, table 2 БДС EN 13032-4, cl. 4.3
36	3. LIGHTING INSTALLATIONS	Illumination	MI 40 (repealed but not replaced), item 4 БДС EN 12464-1, 2

Type of the scope: *flexible***			
№	**Tested products**	**Type of test / characteristic**	**Testing methods (standard /validated method)**
1	**2**	**3**	**4**
	3.1. For internal natural and artificial lighting. 3.2. For street lighting. 3.3. For sports lighting.		БДС EN 13201-4 CR 14380, cl.9 and Annex A БДС EN 1838, Annex A БДС EN 12193, cl. 6
37	3.4. For artistic and architectural lighting. 3.5. For tunnel lighting. 3.6. For emergency lighting.	Luminance	MI 40 (repealed but not replaced), item 4 БДС EN 12464-1, 2 БДС EN 13201-4 CR 14380, cl. 9 and Annex A БДС EN 1838, Annex A БДС EN 12193, cl. 6
38		Illumination uniformity	MI 40 (repealed but not replaced), item 4 БДС EN 12464-1, 2 БДС EN 13201-4 CR 14380, cl.9 and Annex A БДС EN 1838, Annex A БДС EN 12193, cl. 6
39		Luminance uniformity	MI 40 (repealed but not replaced), item 4 БДС EN 12464-1, 2 БДС EN 13201-4 CR 14380, cl. 9 and Annex A БДС EN 1838, Annex A БДС EN 12193, cl. 6
40	4. SIGNALING MEANS 4.1. Traffic lights 4.2. Signal lights, 4.3. Headlights 4.4. Light - signaling devices, etc. light marking	Light intensity	БДС EN 12368, cl. 8.2; БДС EN 12352, cl. 6.2; Ordinance № 14, Annex № 9 БДС 4704 cl. 3.2.1, cl. 3.2.2, cl. 5.1.1, cl. 5.1.2 БДС 10916, from cl. 4.3 to cl. 4
41		Luminance uniformity of the illuminated field	БДС EN 12368, cl. 8.3 БДС EN 12352, cl. 6.3
42		Light intensity coefficient (Specific reflection coefficient)	БДС EN 12368, cl. 8.4 БДС EN 12352, cl. 6.2
43		Coordinates of color	БДС EN 12368, cl. 8.5/8.6 БДС EN 12352, cl. 6.4 Ordinance № 14/2000, Annex № 1 to art. 101, para. 3 UNECE Regulation № 43 /Rev. 2/ 1995, Annex 3, item 9.4 БДС 4704 (repealed but not replaced),

Type of the scope: *flexible***			
№	**Tested products**	**Type of test / characteristic**	**Testing methods (standard /validated method)**
1	**2**	**3**	**4**
			cl. 5.1.3 БДС 10916, cl. 4.2
44		Luminance factor β_e	БДС EN 12368, cl. 8.5/8,6 БДС EN 12352, cl. 6.4
45		Skip Rate (Coefficient of light oversight)	ECE Regulation № 43 /Rev. 2/ 1995, Annex 3, item 9 БДС 9973– cl. 4.16
46	4.5. Road signs: 4.5.1. Fixed, fixed vertically;	Coordinates of color	БДС EN 12899-1, cl. 4 and cl.7, Annex A БДС EN 12966-1, cl. 5.5 БДС EN 1463-1, Annexes A, B and C
47	4.5.2. With internal lighting; 4.5.3. Reflective bars;	Luminance factor β_e	БДС EN 12899-1, cl. 4 and cl. 7, Annex A БДС EN 12966-1, cl. 5.5 БДС EN 1463-1, Annexes A, B and C
48	4.5.4. Variable message signs 4.5.5. Reflective road studs.	Light intensity coefficient (Specific reflection coefficient)	БДС EN 12899-1, cl. 4 and cl.7, Annex A БДС EN 12966-1, cl. 5.5 БДС EN 1463-1, Annexes A, B and C
49		Luminance uniformity	БДС EN 12899-1, cl. 4 and cl.7, Annex A БДС EN 12966-1, cl. 5.5 БДС EN 1463-1, Annexes A, B and C
50		Luminance, Luminance ratio	БДС EN 12966-1, cl. 5.5
51	4.6. Road markings (road marking paint)	Coordinates of color	БДС EN 1436, cl. 4.4, table 6 and 7; Annex C
52		Luminance factor β_e	БДС EN 1436, 4.4, table 6 and 7; Annex C
53		Light intensity coefficient (Specific reflection coefficient)	БДС EN 1436–cl. 4.2 and cl. 4.3, Annexes A and B
54	4.7. Signs for vehicle registration numbers and trailers 4.8. Identifying signs for moving vehicles	Coordinates of color	БДС ISO 7591, cl. 7 UNECE Regulation № 69 UNECE Regulation № 70 UNECE Regulation № 104, item 7.1 and Annex 6
55		Luminance factor β_e	БДС ISO 7591, cl. 7 UNECE Regulation № 69 UNECE Regulation № 70 UNECE Regulation № 104, item 7.1 and Annex 6
56		Light intensity coefficient (Specific reflection coefficient)	БДС ISO 7591, cl. 7 UNECE Regulation № 69 UNECE Regulation № 70 UNECE Regulation № 104, item 7.1 and Annexes 1 and 7

Type of the scope: *flexible***			
№	**Tested products**	**Type of test / characteristic**	**Testing methods (standard /validated method)**
1	**2**	**3**	**4**
57	4.9. Stop-signal triangle	Coordinates of color	UNECE Regulation № 27, item 2 and Annex 5
58		Luminance factor β_e	UNECE Regulation № 27, item 2 and Annex 5
59		Light intensity coefficient (Specific reflection coefficient)	UNECE Regulation № 27, item 4 and Annexes 5 and 6
60		Unifirmity of Light intensity coefficient	UNECE Regulation № 27, item 4 and Annex 5

References:

1	*БДС 8.882:1984 (repealed but not replaced)	Colorimetry. Basic methods for measuring color
2	*БДС 4704:1984 (repealed but not replaced)	Vehicle electrical equipment. Headlights.
3	CIE Publication № 127:2007 - Publication of the International Commission on Illumination (CIE)	Measurement of LEDs.
4	CIE Publication № 15:2018 - Publication of the International Commission on Illumination (CIE)	Colorimetry.
5	CIE Publication № 121:1996 - Publication of the International Commission on Illumination (CIE)	Photometry and goniophotometry of luminaries.
6	Regulation (EC) № 244:2009, Annex III	Regulation implementing Directive 2005/32/ EC of the European Parliament and of the Council with regard to ecodesign requirements for non-directional household lamps
7	MI (Methodological Instructions) 40-85-CCNTP - Headquarters Standardization: 1985	Methods for measurement and evaluation of artificial lighting.
8	СД CR 14380, (CEN report): 2005	Applied lighting. Tunnel Lighting
9	UNECE Regulation № 27/Addendum 26:1998	Technical requirements for the approval of a stop-signal triangle.
10	UNECE Regulation № 43/Addendum 42:1995	Technical requirements for wheeled vehicles and parts thereof.
11	UNECE Regulation № 69/Addendum 68:1995	Uniform Conditions for Approval of Rear Bodies for Slow Vehicles and their Trailers.
12	UNECE Regulation № 70/Addendum 69:1987	Uniform Conditions for Approval of Rear Bodies for Long and Long Vehicles.
13	UNECE Regulation № 104/Addendum 103:1998	Uniform Conditions for Approval of Light-reflecting Markings for Slow-Driven Vehicles and Their Trailers.
14	Ordinance № 14/2012, SG, № 86 and № 87	Ordinance on airports and airport insurance (Main characteristics of airports).

***Flexible scope:** Implementing a new version of standards/documents or standards/documents replacing them is allowed. An updated list of standards/documents and their dated versions is provided by laboratory.*

To perform calibration of:

Type of the scope: fixed					
№	**Measuring instrument**	**Measured value, unit of measure**	**Measurement Range**	**Measurement uncertainty**	**Calibration method**
1	**2**	**3**	**4**	**5**	**6**
1	Luxmeter	Illumination, lx	from 50 lx to 1000 lx	2,5 % (κ=2)	ME 11-13/2021 (РПК 17:2021)

Reference: ME 11-13/2021 (РПК 17:2021) Methodology for Calibration of Luxmeters.

Note: The calibration activity is only performed in the laboratory.

I ORDER

To issue the certificate of accreditation reg. № 9 ЛИК/07.03.2024 valid until 07.03.2028 and this order enclosed as an integral part of it.

The certificate of accreditation with the enclosure should be obtained from the head of Scientific, Research, Testing and Calibration Laboratory for Lighting Technique at Technical university, Sofia or other authorized person in the office of EA BAS.

This order shall be notified to the Scientific, Research, Testing and Calibration Laboratory for Lighting Technique at Technical university, Sofia within 3 (three) days from its issuance.

Eng. Irena Borislavova

Executive Director of EA BAS