SNAS
SLOVENSKÁ NÁRODNÁ AKREDITAČNÁ SLUŽBA
Karloveská 63, 840 00 Bratislava 4, Slovenská republika

CERTIFICATE
OF ACCREDITATION

No. K-100

The Slovak National Accreditation Service based on the decision No. 058/10324/2023/1 dated 11.01.2023 certifies that

Slovenská legálna metrológia, n.o.
Calibration laboratory

Hviezdoslavova 31, 974 01 Banská Bystrica
ID Number: 37 954 521

is competent to carry out calibration of measuring instruments and measures of length, angle, taximeters, measuring instruments and measures of volume, flow, mass, pressure, force, torque, pendulum impact testing machines, hardness testers for rubber and plastics, road laser and radar speedometers, automatic level measuring instruments, contact and non-contact measuring instruments of temperature and measuring instruments of heat, measuring instruments and measures of electrical quantities(voltage, current, resistance, power, energy, inductance, capacitance, quality of electrical energy), frequency and time, physical-chemical quantities, hygrometers, density meters, breath analyzers, motor vehicle exhaust gas analyzers within the accreditation scope delineated in the Annex to this Certificate. The Annex is an integral part of Certificate of Accreditation.

The accredited body gives evidence of competence to perform the accredited activity impartially and trustworthily by meeting the requirements of the **ISO/IEC 17025: 2017** *Standard.*

Accreditation granted on 11.01.2023 is valid until 02.07.2025.

Bratislava 11.01.2023

SLOVENSKÁ NÁRODNÁ AKREDITAČNÁ SLUŽBA 2 SNAS

Štefan K r á l
director

SNAS is signatory to the EA MLA and ILAC MRA.

Activity specification

Name of the accredited body: **Slovak legal metrology, n.o.**
Calibration laboratory
Hviezdoslavova 31, 974 01 Banská Bystrica,

LABORATORY WITH A FLEXIBLE SCOPE OF ACCREDITATION

Laboratory of Length*

LABORATORY WITH A FIXED SCOPE OF ACCREDITATION

Laboratory of Length	
Metrological workplace Bratislava	Geologická 1, 822 11 Bratislava
Metrological workplace Nitra	Kmeťkova 3, 949 01 Nitra Automobilova 1, 917 01 Trnava (PSA)
Metrological workplace Banská Bystrica	Hviezdoslavova 31, 974 01 Banská Bystrica
Metrological workplace Žilina	Závodského 33, 010 04 Žilina
Metrological workplace Košice	Zemplínska 46, 040 01 Košice
Laboratory of volume and flow	
Metrological workplace Bratislava	Geologická 1, 822 11 Bratislava
Metrological workplace Nitra	Kmeťkova 3, 949 01 Nitra
Metrological workplace Banská Bystrica	Hviezdoslavova 31, 974 01 Banská Bystrica
Metrological workplace Žilina	Závodského 33, 010 04 Žilina
Metrological workplace Košice	Zemplínska 46, 040 01 Košice
Laboratory of mass	
Metrological workplace Bratislava	Geologická 1, 822 11 Bratislava
Metrological workplace Nitra	Kmeťkova 3, 949 01 Nitra
Metrological workplace Banská Bystrica	Hviezdoslavova 31, 974 01 Banská Bystrica
Metrological workplace Žilina	Závodského 33, 010 04 Žilina
Metrological workplace Košice	Zemplínska 46, 040 01 Košice
Laboratory of testing machines or instruments on the mechanical testing of materials	
Metrological workplace Bratislava	Geologická 1, 822 11 Bratislava
Metrological workplace Žilina	Závodského 33, 010 04 Žilina
Metrological workplace Košice	Zemplínska 46, 040 01 Košice
Laboratory of mechanical movement	
Metrological workplace Bratislava	Geologická 1, 822 11 Bratislava
Laboratory of pressure	
Metrological workplace Bratislava	Geologická 1, 822 11 Bratislava
Metrological workplace Nitra	Kmeťkova 3, 949 01 Nitra
Metrological workplace Banská Bystrica	Hviezdoslavova 31, 974 01 Banská Bystrica
Metrological workplace Žilina	Závodského 33, 010 04 Žilina
Metrological workplace Košice	Zemplínska 46, 040 01 Košice
Laboratory of temperature and heat	
Metrological workplace Bratislava	Geologická 1, 822 11 Bratislava
Metrological workplace Banská Bystrica	Hviezdoslavova 31, 974 01 Banská Bystrica
Metrological workplace Košice	Zemplínska 46, 040 01 Košice
Laboratory of electrical quantities, frequency, time	
Metrological workplace Bratislava	Geologická 1, 822 11 Bratislava
Metrological workplace Banská Bystrica	Hviezdoslavova 31, 974 01 Banská Bystrica
Metrological workplace Košice	Zemplínska 46, 040 01 Košice
Laboratory of acoustics	
Metrological workplace Banská Bystrica	Hviezdoslavova 31, 974 01 Banská Bystrica
Laboratory of physical and chemical quantities	
Metrological workplace Žilina	Závodského 33, 010 04 Žilina
Metrological workplace Bratislava	Geologická 1, 822 11 Bratislava
Metrological workplace Banská Bystrica	Hviezdoslavova 31, 974 01 Banská Bystrica
Metrological workplace Košice	Zemplínska 46, 040 01 Košice

FIXED SCOPE

An accredited laboratory with a flexible scope, provided that the specified requirements are met, can perform accredited activities beyond the scope of the declared scope of accredited items, scope and uncertainty.

LABORATORY OF LENGTH

Item no.	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Other specifications
					Type/Principle	Item no.	
LENGHT, AREA (GEOMETRICAL QUANTITIES)							
1.1	Gauge blocks	Length, Area	(0 to 100) mm	$(0{,}06 + 0{,}54 \cdot L)$ µm	Direct comparison with gauge blocks (standard) on gauge blocks comparator.	PP-11-01 (STN EN ISO 3650)	SLM
			(125 to 1 000) mm	$(0{,}1 + 0{,}58 \cdot L)$ µm			
1.2	Linear lenght sensors		(0,1 to 16) m	0,02 mm	Direct comparison with laser interferometer	PP-11-02	SLM, EXT *7
	Automatic level measuring devices (tank gauging instrument)		(0,5 to 16) m	0,4 mm		PP-11-02 (OIML R 85)	
	Surface plates		do (2 000 x1 600 x 300) mm	0,005 mm		PP-11-02 (ISO 8512-1, ISO 8512-2)	
	Laser rangefinders		(0 to 16) m	0,7 mm		PP-11-02 (ISO 16331-1:2017)	
1.3	Optical rulers		(0 to 300) mm	4 µm	Direct comparison with CMM	PP-11-03 (STN 99 1005)	SLM
	Calibers		(0 to 300) mm	5 µm		PP-11-03 (VDI/VDE/DGQ 2618)	
	Testing sieves		(0 to 300) mm	8 µm	Direct comparison with CMM Direct comparison with measuring microscope	PP-11-03, PP-11-06 (STN ISO3310-1 STN ISO3310-2 STN ISO3310-3)	SLM *6
			(4 to 300) mm	50 µm	Direct comparison with calipers Direct comparison with pin gauges		
1.4	Calipers		(0 to 2 000) mm	$(10 + 10 \cdot L)$ µm	Direct comparison with gauge blocks	PP-11-04 (VDI/VDE/DGQ 2618)	SLM
	Depth measures		(0 to 2 000) mm	$(10 + 10 \cdot L)$ µm		PP-11-04 (VDI/VDE/DGQ 2618)	
	Height Gauges		(0 to 2 000) mm	$(10 + 10 \cdot L)$ µm		PP-11-04 (VDI/VDE/DGQ 2618)	
	Micrometric calipers		(0 to 500) mm	$(1 + 5 \cdot L)$ µm		PP-11-04 (VDI/VDE/DGQ 2618)	
	Measuring instruments with measuring arms		(0 to 1 000) mm	$(10 + 10 \cdot L)$ µm		PP-11-04 (VDI/VDE/DGQ 2618)	
1.5	Measuring tapes (Material measures of length MI-008)		(1 to 100) m	$(30 + 7 \cdot L)$ µm	Direct comparison with measuring tape (standard) Direct measurement with length encoder	PP-11-05 (STN 99 1005, TPM 0410-97)	SLM *3
	Length measuring instruments (dimensional measuring instrument MI-009)		(1 to 100) m	0,08 %		PP-11-05 (STN 25 6112)	SLM, EXT *4
	Vehicle calibration road strip (for Taximeters, Tachographs)		(0 to 50) m	$(3 + 0{,}44 \cdot L)$ mm	Direct comparison with measuring tape (standard)	PP-11-05	SLM, EXT *8,*9
	Multi-dimensional Measuring Instruments (dimensional measuring instrument MI-009)		do (5 x 5 x 5) m	$d/3$		PP-11-05	
	Area Measuring Instruments (dimensional measuring instrument MI-009)		(0 to 1 500) dm^2	0,3 dm^2		PP-11-05	
1.6	Rulers (Rigid mesures:Material measures of length MI-008)		(1 to 2 000) mm	$(2 + 0{,}8 \cdot L)$ µm	Direct comparison with ruler (standard)	PP-11-06	SLM *3

Item no.	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Other specifications
					Type/Principle	Item no.	
	Rigid or semi-rigid measures (Material measures of length MI-008)		(1 to 1 000) mm	0,2 mm		PP-11-06 (STN 99 0378)	
	Short tape measures (Material measures of length MI-008)		(1 to 50) m	$(40 + 23 \cdot L)$ µm	Direct comparison with measuring tape (standard) Direct measurement with length encoder	PP-11-06 (STN 99 1005)	
1.6	Material thickness measuring instruments (coating thickness)	Lenght, Area	(22 to 4 000) µm	$(0,5 + 2\,000 \cdot L)$ µm	Direct comparison with calibration foils	PP-11-06 (VDI/VDE/ DGQ 2618)	SLM *3
	Micrometric Bore Gauges		(0 to 70) mm	$(2,1 + 3 \cdot L)$ µm	Direct comparison with setting rings	PP-11-06 (STN 25 1430, VDI/VDE/DGQ 2618)	
	Feeler Gauges		(0,01 to 25) mm	$(2 + 0,8 \cdot L)$ µm	Direct comparison with micrometric calipers Direct comparison with universal length machine (ULM)	PP-11-06 (STN 25 1670, DIN 2275)	
1.7	Internal measurement Micrometers		(25 to 300) mm	$(1,3 + 3 \cdot L)$ µm	Direct comparison with universal length machine (ULM)	PP-11-07 (STN 25 1435, VDI/VDE/DGQ 2618)	SLM
	Calibration foils		(20 to 5 000) µm	$(0,3 + 100 \cdot L)$ µm		PP-11-07 (VDI/VDE/DGQ 2618)	SLM
	Snap gauges		(5 to 300) mm	$(1,1 + 2 \cdot L)$ µm		PP-11-07 (VDI/VDE/DGQ 2618)	SLM
	Setting rings		(1 to 300) mm	$(1,1 + 2 \cdot L)$ µm		PP-11-07 (VDI/VDE/DGQ 2618)	SLM
	Pin gauges		(4 to 150) mm	$(1,1 + 2 \cdot L)$ µm		PP-11-07 (VDI/VDE/DGQ 2618)	SLM
	Thread plug gauges		(6 to 150) mm	$(2,1 + 0,6 \cdot L)$ µm		PP-11-07 (VDI/VDE/DGQ 2618)	SLM
	Thread ring gauges		(4 to 100) mm	$(2,1 + 0,6 \cdot L)$ µm		PP-11-07 (VDI/VDE/DGQ 2618)	SLM
1.8	Dial gauges		(0 to 100) mm	$(1,8 + 1,2 \cdot L)$ µm	Direct comparison with dial gauge calibrator	PP-11-08 (STN 25 1816, ISO 463:2006)	SLM
	Dial Test Indicator		(0 to 100) mm	$(1,8 + 1,2 \cdot L)$ µm	Direct comparison with micrometric head	PP-11-08 (STN 25 1816, ISO 463:2006)	SLM
	LVDS sensors		(0 to 100) mm	$(1,8 + 1,2 \cdot L)$ µm	Direct comparison with dial gauge calibrator	PP-11-08 (STN 25 1816, ISO 463:2006)	SLM
1.9	Tapered Gauges		(0,1 to 100) mm	10 µm	Direct comparison with height gauge	PP-11-09	SLM
	Wheel circumference measurement instrument (tachographs)		(0 to 600) mm	0,4 mm		PP-11-09	
1.10	Radius gauges		(0 to 35) mm	4 µm	Direct comparison with contour measuring machine	PP-11-10 (VDI/VDE/DGQ 2618)	SLM
	Knife Edge / Straight Edge		(0 to 500) mm	4 µm	Direct comparison with contour measuring machine Direct comparison with height gauge	PP-11-10 (VDI/VDE/DGQ 2618)	SLM
ANGLE							
1.11	Edge Squares	Uhol	α = 90°, arm lenght up to 600 mm	3,1´´	Direct comparison with height gauge	PP-11-09	SLM

Item no.	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Other specifications
					Type/Principle	Item no.	
	Bevel Protractors		4 x 90°	3´	Direct comparison with angle gauges	PP-11-11 (VDI/VDE/DGQ 2618)	SLM
	Inclinometers		2 x 90°	3´	Direct comparison with angle gauges	PP-11-11 (VDI/VDE/DGQ 2618)	SLM
	Spirit Levels		Up to 0,5 µm/m	0,005 µm/m	Direct comparison with sine bar and gauge blocks	PP-11-11	SLM

NOTES:
Flexibility does not refer to changing the principle of the methods used within the given flexible range.
☒ The laboratory maintains an up-to-date list of all test methods with a flexible scope of accreditation on the website https://www.slm.sk/slovenska-legalna-metrologia/akreditovane-cinnosti.html

The laboratory can use the principle of flexibility within:
☒ in relation to the type of meter in one type of meter/measuring instrument, while the calibration method, measuring range and CMC must be preserved
☒ modification of the methods included in the flexible scope of accreditation (the measurement range and CMC remain preserved).

*3 Annex no. 3 to the decree ÚNMS SR no. 161/2019 Coll.
*4 Annex no. 4 to the decree ÚNMS SR no. 161/2019 Coll.
*6 Annex no. 6 to the decree ÚNMS SR no. 161/2019 Coll.
*7 Annex no. 7 to the decree ÚNMS SR no. 161/2019 Coll.
*8 Annex no. 8 to the decree ÚNMS SR no. 161/2019 Coll.
*9 Annex no. 9 to the decree ÚNMS SR no. 161/2019 Coll.
d resolution of measuring instrument
L Lenght in m
α Nominal angle
SLM Internal calibration within SLM laboratory
EXT External calibration outside SLM laboratory

Persons capable of modifying and validating methods / developing new methods during the validity of the accreditation

Name and surname, titles	Ability to modify and validate methods/develop new methods - - no. items
Daniel Kysler, Ing.	1.1 to 1.11
Peter Frasch, Ing.	1.5

FIXED SCOPE

LABORATORY OF LENGTH

Item no.	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Other specifications
					Type/Principle	Item no.	
LENGTH (GEOMETRICAL QUANTITIES)							
1.1	Taximeters, vehicle distance meters	Length	Traveled distance in m	0,5 % of traveled distance	Direct comparison with GPS	STN EN 50148, OIML R 21 (PP-11-12)	SLM, EXT *5
			Elapsed time in s	0,08 % of elapsed time			
1.2	Servo tank gauging instruments		(0,8 to 36) m	(0,06 + 0,035 · L) mm	Direct measurement with length encoder	OIML R 85 (PP-11-13)	SLM, EXT *7
1.3	Extension meters (for universal testing machines / tension testing machines)		(0,01 to 100) mm	0,2 μm	Direct comparison with extension meter calibrator	ASTM E 83-10a, STN EN ISO 9513 (PP-24-05)	SLM, EXT
			(100 to 600) mm		Direct comparison with height gauge		

NOTES:
*5 for the purposes of Annex no. 5 to the decree ÚNMS SR no. 161/2019 Coll.
*7 for the purposes of Annex no. 7 to the decree ÚNMS SR no. 161/2019 Coll.
SLM Internal calibration within SLM laboratory
EXT External calibration outside SLM laboratory

LABORATORY VOLUME, FLOW

Item no.	Type of measuring instrument		Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Other specifications
						Type/Principle	Item no.	
VOLUME, FLOW								
2.1	Laboratory measure and volume measure	standard measure of volume	Volume	(20 to 2 000) cm^3	(0,015 to 0,3) cm^3	indirect comparison using the mass method	EURAMET cg-19 STN 70 4103 STN EN ISO 4787 STN EN 60601-2-24 (PP-13-03)	SLM, EXT *21
		measuring bank		(5 to 2 000) cm^3	(0,03 to 1) cm^3			
		measuring cylinder		(5 to 2 000) cm^3	(0,03 to 2) cm^3			
		pipette		(0,001 to 200) cm^3	(0,0002 to 0,01) cm^3			
		burette		(1 to 100) cm^3	(0,003 to 0,01) cm^3			
		pyknometer		(20 to 200) cm^3	(0,03 to 0,2) cm^3			
		bottle and flacon		(20 to 2 000) cm^3	(0,2 to 4) cm^3			
		medical volume measure (syringe, test tube)		(1 to 200) cm^3	(0,01 to 0,1) cm^3			
		dosing device, titrator		(0,2 to 200) cm^3	(0,006 to 0,01) cm^3			
		other measure and measure of volume		(0,001 to 2 000) cm^3	0,008 % + 0,004 µL			
				(0,05 to 9 000) cm^3	1% + 5 µL	direct comparison using the volumetric method		
2.2	Tap volume measure	tap vessel		(20 to 2 000) cm^3	(0,25 to 4) cm^3	indirect comparison using the mass method, direct comparison with reference volume measures	STN 99 6141, STN 99 6142 (PP-13-02)	SLM, EXT *22 *23
		tap dispenser		(20 to 500) cm^3	(0,2 to 1) cm^3			
		automatic dispenser		(20 to 1 000) cm^3	(0,2 to 2) cm^3		(PP-13-02) (PP-13-03)	
2.3	Measuring instrument and measure of liquid volume	standard measure of volume		(2 to 500) L	0,01 %	indirect comparison using the mass method, direct comparison using the volumetric method	STN 25 7511, STN 99 6312 (PP-13-01)	SLM, EXT
		measuring container and watering can		(2 to 1 000) L	0,06 %			SLM, EXT *20
		transport barrel		(2 to 1 500) L	0,1 %			SLM, EXT *25
		other measure and measure of volume		(2 to 1 500) L	0,1 %			SLM, EXT
2.4	Storage tank	barrel		(0,002 to 5) m^3	0,1 %	direct comparison using the volumetric method	STN 25 7511, STN 25 7513 (PP-13-04) (PP-13-08)	SLM, EXT *24 *25
		tank and cistern		(1 to 50) m^3				
		milk tank		(1 to 50) m^3				
		stationary tank		(0,05 to 100 000) m^3				
		other large volume tank		(0,05 to 100 000) m^3				
		stationary tank		(25 to 100 000) m^3	0,08 %	geometric method	STN 99 6423 (PP-13-05)	

Item no.	Type of measuring instrument		Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Other specifications
						Type/Principle	Item no.	
2.5	Flow meter and flow volume of liquid	liquid other than water	Flow of liquid	flow volume in the flow range (0,01 to 2000) L/min	0,15 %	direct comparison with the overflow quantity standard, indirect comparison by mass method	STN 99 7503 STN 99 6710 (PP-13-07) (PP-13-08) (PP-13-10)	SLM, EXT *15 *16 *17
		alcohol		flow volume in the flow range (0,2 to 20) L/min	0,07 %	direct comparison with the overflow quantity standard	STN 99 6010 (PP-13-06)	EXT *18
		liquefied gas		flow volume in the flow range (5 to 400) L/min	0,18 %	direct comparison with the master meter	STN 99 7503 STN 99 6710 (PP-13-09)	EXT *15 *16 *17
		water		flow volume in the flow range (0,002 to 0,2) m^3/h	0,2 mL + 0,06 % (SV) *	indirect comparison by mass method	STN EN 1434STN 25 7820 STN EN ISO 4064 (PP-13-12)	SLM *10 *47 *13
					0,2 mL + 0,25 % (TÚV) *			
				flow volume in the flow range (0,2 to 160) m^3/h	0,06 % (SV) *			
					0,1 % (TÚV) *			
				flow volume in the flow range (160 to 320) m^3/h	0,07 % (SV) *			
					0,1 % (TÚV) *			
				flow volume in the flow range (0,002 to 0,2) m^3/h	0,16 % (SV)	direct comparison with the master meter		
					0,16 % (TÚV)			
				flow volume in the flow range (0,2 to 320) m^3/h	0,25 % (SV)			
					0,3 % (TÚV)			
2.6	Test bench of water meter for cold and hot water, flow meter and flow measuring element of heat meter			flow volume in the flow range (0,04 to 70) m^3/h	(0,10 to 0,25) %	direct comparison with the master meter	STN 99 6810 STN 25 7820 STN EN ISO 4064 (PP-13-13)	EXT
2.7	Meter of flow volume of water with free level			flow in the range of flow rate (0,07 to 1,2) m/s	2,1 % from the flow value	indirect comparison using the speed method	STN ISO EN 748 (PP-13-14)	EXT *11
				flow volume in the range of flow rate (1 to 7) L/s	1,3 %	direct comparison with the master meter or overflow quantity		
2.8	Measurement of the volume of wood mass		Volume	volume in the range of geometric dimensions (0,2 to 1) m mean (1 to 35) m length	5 mm (mean) 6 mm (length) 0,01 m^3 (volume)	geometric method	PP-13-15	EXT
2.9	Flow meter and flow volume of gas		Gas flow	flow mass in the flow range (0,1 to 100) kg/min	0,33 % from the measured mass	direct comparison by mass method	STN 99 6810 (PP-13-11)	EXT *28 **

Item no.	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Other specifications
					Type/Principle	Item no.	

NOTES:

*10	Annex no. 10 to the decree ÚNMS SR no. 161/2019 Coll.
*11	Annex no. 11 to the decree ÚNMS SR no. 161/2019 Coll.
*13	Annex no. 13 to the decree ÚNMS SR no. 161/2019 Coll.
*15	Annex no. 15 to the decree ÚNMS SR no. 161/2019 Coll.
*16	Annex no. 16 to the decree ÚNMS SR no. 161/2019 Coll.
*17	Annex no. 17 to the decree ÚNMS SR no. 161/2019 Coll.
*18	Annex no. 18 to the decree ÚNMS SR no. 161/2019 Coll.
*20	Annex no. 20 to the decree ÚNMS SR no. 161/2019 Coll.
*21	Annex no. 21 to the decree ÚNMS SR no. 161/2019 Coll.
*22	Annex no. 22 to the decree ÚNMS SR no. 161/2019 Coll.
*23	Annex no. 23 to the decree ÚNMS SR no. 161/2019 Coll.
*24	Annex no. 24 to the decree ÚNMS SR no. 161/2019 Coll.
*25	Annex no. 25 to the decree ÚNMS SR no. 161/2019 Coll.
*28	Annex no. 28 to the decree ÚNMS SR no. 161/2019 Coll.
*47	Annex no. 47 to the decree ÚNMS SR no. 161/2019 Coll.
%	from the measured volume
TUV	domestic hot water
SV	cold water
SLM	Internal calibration within SLM laboratory
EXT	External calibration outside SLM laboratory
*	or from the measured mass
**	measured medium CNG, LPG

LABORATORY OF MASS

Item no.	Type of measuring instrument		Calibrated / measured quantity	Measurement range	Expanded uncertainty U ($k = 2$)	Established method		Other specifications
						Type/Principle	Item no.	
MASS								
3.1	Weights		Mass	1 mg	0,003 mg	Direct comparison with a weight standard	STN 17 7805 OIML R 111 (PP-21-01)	SLM *29
				2 mg	0,003 mg			
				5 mg	0,003 mg			
				10 mg	0,003 mg			
				20 mg	0,004 mg			
				50 mg	0,005 mg			
				100 mg	0,005 mg			
				200 mg	0,007 mg			
				500 mg	0,008 mg			
				1 g	0,01 mg			
				2 g	0,013 mg			
				5 g	0,015 mg			
				10 g	0,020 mg			
				20 g	0,025 mg			
				50 g	0,03 mg			
				100 g	0,05 mg			
				200 g	0,10 mg			
				500 g	0,25 mg			
				1 kg	0,50 mg			
				2 kg	1,0 mg			
				5 kg	2,5 mg			
				10 kg	5 mg			
				20 kg	10 mg			
				50 kg	0,2 g			
	Weights for testing scales with high weighing capacity			100 kg	0,4 g		STN 17 7805 OIML R 47 OIML R 111 (PP-21-04)	SLM EXT
				200 kg	0,75 g			
				500 kg	3 g			
				1000 kg	4 g			
	Railway wagons with weights			to 80 000 kg	$3.10^{-5} \cdot m$		STN 17 7805 OIML R 47 (PP-21-04)	EXT
	Special weights			to 10 mg	0,03 mg		OIML R 111 (PP-21-01)	SLM
				to 100 mg	0,05 mg			
				to 1 g	0,1 mg			
				to 10 g	0,2 mg			
				to 100 g	0,5 mg			
				to 1 kg	5 mg			
				to 10 kg	50 mg			
				to 20 kg	0,1 g			
				to 100 kg	3 g		OIML R 111 (PP-21-04)	SLM EXT
				to 500 kg	4 g			
				to 1000 kg	5 g			
3.2	Non-automatic	I	Mass	to 50 kg	$1 \cdot 10^{-6} \cdot m$	direct comparison	STN EN 45 501	SLM, EXT

Item no.	Type of measuring instrument		Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Other specifications
						Type/Principle	Item no.	
	weighing instruments	TP				with a weight standard, or substitute load or sub stitute load	EURAMET cg-18 (PP-21-02)	*30
		II TP		to 52 kg	$2 \cdot 10^{-6} \cdot m$			
				to 1 500 kg	$5 \cdot 10^{-6} \cdot m$			
		III TP		to 1 500 kg	$5 \cdot 10^{-6} \cdot m$			
				to 2 000 kg	$2 \cdot 10^{-5} \cdot m$			
				to 5 000 kg	$3 \cdot 10^{-5} \cdot m$			
				to 80 000 kg	$5 \cdot 10^{-5} \cdot m$			
				to 120 000 kg	$1 \cdot 10^{-4} \cdot m$			
		IIII TP		to 1 500 kg	$3 \cdot 10^{-5} \cdot m$			
				to 5 000 kg	$4 \cdot 10^{-5} \cdot m$			
				to 80 000 kg	$2 \cdot 10^{-4} \cdot m$			
				to 120 000 kg	$3 \cdot 10^{-4} \cdot m$			
3.3	Automatic weighing instruments classes 0,2; 0,5; 1 a 2			to 500 kg	$1 \cdot 10^{-5} \cdot m$	direct comparison with a weight standard or the reference mass	STN 17 7051 STN 17 7052 STN 17 7053 STN 17 7054 OIML R 50 -1, -2 OIML R 51 -1, -2 OIML R 61 -1, -2 OIML R 106 -1, -2 OIML R 107 -1, -2 (PP-21-05)	EXT *32
				to 5 000 kg	$2 \cdot 10^{-5} \cdot m$			
				to 120 000 kg	$1 \cdot 10^{-4} \cdot m$			
				to 120 000 kg	$1 \cdot 10^{-4} \cdot m$			
	Automatic instruments for weighing road vehicles in motion and measuring axle loads accuracy class 0,2; 0,5; 1 a 2 for vehicle mass and accuracy class A, B, C a D for single-axle load and axle-group load			to 20 000 kg	$5 \cdot 10^{-5} \cdot m$	direct comparison with a weight standard or the reference mass	STN 17 7015 OIML R 134 -1, -2 (PP-21-06)	EXT *31
				to 120 000 kg	$1 \cdot 10^{-4} \cdot m$			
3.4	Measuring instruments for cereals			mass per hectolitre 1 L	0,1 kg · hl^{-1}	direct comparison of results with a standard	PP-21-11	SLM *33

NOTES:

*29	Annex no. 29 to the decree ÚNMS SR no. 161/2019 Coll.
*30	Annex no. 30 to the decree ÚNMS SR no. 161/2019 Coll.
*31	Annex no. 30 to the decree ÚNMS SR no. 161/2019 Coll.
*32	Annex no. 32 to the decree ÚNMS SR no. 161/2019 Coll.
*33	Annex no. 33 to the decree ÚNMS SR no. 161/2019 Coll.
m	measured mass
TP	accuracy class
SLM	internal calibration within SLM laboratory
EXT	external calibration outside SLM laboratory

LABORATORY OF TESTING MACHINES OR INSTRUMENTS ON THE MECHANICAL TESTING OF MATERIALS

Item no.	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Other specifications
					Type/Principle	Item no.	
FORCE							
4.1	Unaxial testing machines for tension and compresion and force measuring instruments	Force	20 mN to 100 kN in tensile and compressive	0,04 %	direct comparison with a force standards	STN EN ISO 7500-1, STN EN ISO 7500-2, STN EN ISO 376, STN EN 12 390-4, STN 99 4802, (PP-24-01)	SLM
			20 mN to 200 kN in tensile and compressive	0,05 %			EXT *39
			200 kN to 1 000 kN in tensile and compressive	0,1 %			
			(1 000 to 5 000) kN in compressive	0,2 %			
MECHANICAL ENERGY							
4.2	Pendulum impact testing machines	Mechanical energy	(0,05 to 1 000) J	0,1 %	direct method, which is static in nature, involves measurement of the critical parts of the machine	STN EN ISO 148-2 (PP-24-02)	SLM EXT *39
TORQUE							
4.3	Hand torque tools	Torque	(0,2 to 10) N·m	(0,5 % + 0,01) N·m	direct comparison with a torque standards	STN EN ISO 6789, EURAMET cg-14 (PP-24-03)	SLM *42
			(10 to 1 000) N·m	0,3 %			
			(2 to 1 000) N·m	(0,3 % + 0,02) N·m			SLM PSA *42
	Measurment devices of torque		(2 to 1 000) N·m	(0,2 % + 0,01) N·m			SLM, EXT
			(2 to 1 000) N·m	(0,3 % + 0,02) N·m			SLM PSA
HARDNESS							
4.4	Hardness testers A, D, AO, AM, IRHD	Hardness	(10 to 100) for typs A, D, AO, AM (30 to 100) for typs IRHD	0,25 %	direct comparison on a calibration device or weighing instrument	STN EN ISO 868, ISO 18898 (PP-24-06)	SLM

NOTES:
*39 Annex no. 39 to the decree ÚNMS SR no. 161/2019 Coll.
*42 Annex no. 42 to the decree ÚNMS SR no. 161/2019 Coll.
% relative value in % of the measured value
SLM internal calibration within SLM laboratory
EXT external calibration outside SLM laboratory
SLM PSA Laboratory SLM in PSA Peugeot Trnava

LABORATORY OF MECHANICAL MOVEMENT (KINEMATICS)

Item no.	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Other specifications
					Type/Principle	Item no.	
SPEED							
5.1	Vehicle speed measuring equipment and speed measuring equipment integrated with other instruments	Speed	Speed simulation (Radar, Lidar) (10 to 300) km/h	0,9 km/h	Direct comparison	OIML R 91 (PP-22-01) (PP-22-02)	SLM, EXT *34
			Speed simulation (impulse – vehicle sensors) (10 to 300) km/h *(1)	0,1 km/h	Indirect comparison	OIML R 91 (PP-22-02)	
			(0,1 to 278) mm/s *(2)	0,1 %	Indirect comparison	PP-22-03	
			(1 to 130) km/h *(1)*(2)	0,15 km/h	Indirect comparison	PP-22-03	
			(1 to 130) km/h *(1)*(2)	0,5 km/h	Direct comparison	PP-22-03	
RPM (FREQENCY OF MECHANICAL MOVEMENT)							
5.2	RPM meters Measuring instruments generating and measuring RPM	RPM (frequency of mechanical movement)	(1 to 30 000) 1/min	0,01 % + 0,6 · d	Indirect measurement, Indirect comparison	PP-60-04	SLM, EXT
			(1 to 100 000) 1/min	0,005 %	Indirect measurement, Indirect comparison	PP-60-04	

NOTES:
*34 Annex no. 34 to the decree ÚNMS SR no. 161/2019 Coll.
d resolution of measuring instrument
SLM Internal calibration within SLM laboratory
EXT External calibration outside SLM laboratory

LABORATORY OF PRESSURE

dentification	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty $U(k = 2)$	Established method		Other specifications
					Type/Principle	Item no.	
PRESSURE							
6.1	Tire pressure gauge	Over pressure	(0 to 20) bar	0,02 bar	Direct comparison	EN 12645 (PP-23-02)	SLM, EXT *36
6.2	Oscillometers (electromechanical, aneroid, mercury pressure gauges)	Over pressure	(0 to 400) mmHg	0,9 mmHg	Direct comparison	PP-23-01	SLM, EXT *37
6.3	Directly indicating pressure gauge, electromechanical gauge, (deformation pressure gauge, digital gauge, fluid pressure gauge, pressure calibrators, pressure meters and pressure generators)	Negative pressure	(-95 to -3) kPa, 0 kPa	0,020 % + 0,001 kPa	Direct comparison, non-direct measurement	EURAMET cg-17 (PP-23-03)	SLM *38
			(-90 to 0) kPa	0,045 % + 0,020 kPa	Direct comparison, direct measurement		SLM, EXT *38
		Over pressure (non-corrosive gases)	(3 to 50) kPa	0,020 % + 0,001 kPa	Non-direct comparison, non-direct measurement		SLM *38
			(50 to 5 000) kPa	20 Pa + $60 \cdot 10^{-6} \cdot p$			
			(5 to 20) MPa	0,010 % + 0,002 kPa			
			(0 to20) MPa	0,045 % + 0,020 kPa	Direct comparison, direct measurement		SLM, EXT *38
		Over pressure (oil or liquids)	(2 to 100) MPa	50 Pa + $50 \cdot 10^{-6} \cdot p$ + $0,35 \cdot 10^{-12} \cdot p^2$	Non-direct comparison, non-direct measurement		SLM *38
			(0,1 to 70) MPa	0,1 %	Direct comparison, direct measurement		SLM, EXT *38
		Absolute pressure (gases or liquids)	(3 to 20 000) kPa for gases (2 to 100) MPa for liquids	0,01 % + 6 Pa	Non-direct comparison, non-direct measurement		SLM, EXT *38
		Differential pressure *1	(0,005 to 0,5) kPa	0,3 Pa	Direct comparison		SLM, EXT *38
			(0,5 to 10) kPa	0,05%			
			(10 to 1 000) kPa	0,015 %			
			(0 to 70) MPa	0,1 %	Direct comparison,		SLM, EXT *38
		Barometric pressure	(80 to 110) kPa	6 Pa	Direct comparison, direct measurement		SLM *38
6.4	Pressure Transducers (analog output, HART - Highway Addressable Remote Transducer Protocol, digital output)	Negative pressure	(-95 to -3) kPa 0 kPa	0,020 % + 0,001 kPa + (0,002 %R or 0,6.*d*)	Non-direct comparison, non-direct measurement	EURAMET cg-17 (PP-23-03)	SLM *38
			(-90 to 0) kPa	0,045 % + 0,020 kPa + (0,002 %R or 0,6.*d*)	Direct comparison, direct measurement		SLM, EXT *38
		Over pressure (non-corrosive	(3 to 50) kPa	0,020 % + 0,001 kPa + (0,002 %R or 0,6.*d*)	Non-direct comparison,		SLM *38

dentification	Type of measuring instrument		Calibrated / measured quantity	Measurement range	Expanded uncertainty $U(k = 2)$	Established method		Other specifications
						Type/Principle	Item no.	
		gases)		(50 to 5 000) kPa	20 Pa + $60 \cdot 10^{-6} \cdot p$ + (0,002 %R or 0,6.d)	non-direct measurement		
				(5 to 20) MPa	0,010 % + 0,002 kPa + (0,002 %R or 0,6.d)			
				(0 to 20) MPa	0,045 % + 0,020 kPa + (0,002 %R or 0,6.d)	Direct comparison, direct measurement		SLM, EXT *38
6.4	Pressure Transducers (analog output, HART, digital output)	Over pressure (oil or liquids)	Pressure	(2 to 100) MPa	50 Pa + $50 \cdot 10^{-6} \cdot p$ + $0,35 \cdot 10^{-12} \cdot p^2$ + (0,002 %R or 0,6.d)	Non-direct comparison, non-direct measurement	EURAMET cg-17 (PP-23-03)	SLM *38
				(0,1 to 70) MPa	0,1 %+ (0,002 %R or 0,6.d)	Direct comparison, direct measurement		SLM, EXT *38
		Absolute pressure (gases or liquids)		(3 to 20 000) kPa for gases (2 to 100) MPa for liquid	0,01 % + 6 Pa + (0,002 %R or 0,6.d)	Non-direct comparison, non-direct measurement		SLM, EXT *38
		Differential pressure *1		(0,005 to 0,5) kPa	0,3 Pa + (0,002 %R or 0,6.d)	Direct comparison,		SLM, EXT *38
				(0,5 to 10) kPa	0,05% + (0,002 %R or 0,6.d)			
				(10 to 1 000) kPa	0,015 % + (0,002 %R or 0,6 . d)			
				(0 to 70) MPa	0,1 % + (0,002 %R or 0,6.d)	Direct comparison,		SLM, EXT *38
		Barometric pressure		(80 to 110) kPa	6 Pa + (0,002 %R or 0,6.d)	Direct comparison, direct measurement		SLM *38
6.5	Piston and bullet pressure gauges	Over pressure (gases)		effective area of the piston pressure gauge in the pressure range (3 to 50) kPa	0,05 %	Non-direct comparison with piston gauges	OIML R 110 EURAMET cg-3 (PP-23-07)	SLM
				effective area of the piston pressure gauge in the pressure range (0,05 to 5) MPa	2 Pa + $48 \cdot 10^{-6} \cdot p$			
				effective area of the piston pressure gauge in the pressure range (5 to 20) MPa	50 Pa + $48 \cdot 10^{-6} \cdot p$ + $0,30 \cdot 10^{-12} \cdot p^2$			
		Over pressure (liquids)		effective area of the piston pressure gauge in the pressure range (2 to 12) MPa	50 Pa + $48 \cdot 10^{-6} \cdot p$ + $0,30 \cdot 10^{-12} \cdot p^2$			
				effective area of the piston pressure gauge in the pressure range (12 to 100) MPa	100 Pa + $41 \cdot 10^{-6} \cdot p$ + $0,35 \cdot 10^{-12} \cdot p^2$			
6.6	Bullet pressure gauges	Over pressure		effective area of the piston pressure gauge in the pressure range (0,05 to 10) MPa	0,009 %			

dentification	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty $U(k = 2)$	Established method		Other specifications
					Type/Principle	Item no.	

NOTES:

*36	Annex no.36 from the decree of the ÚNMS SR no. 161/2019 Coll.
*37	Annex no.37 from the decree of the ÚNMS SR no. 161/2019 Coll.
*38	Annex no.38 from the decree of the ÚNMS SR no. 161/2019 Coll.
*[1]	in range to 16 kPa for static pressure 300 Pa
p	pressure value Pa
%	of full scale
%R	from range the gauge
d	the scale value
SLM	Internal calibration within SLM laboratory
EXT	External calibration outside SLM laboratory

LABORATORY OF TEMPERATURE, HEAT

dentificati on	Type of measuring instrument		Calibrated / measured quantity	Measurement range	Expanded uncertainty $U(k = 2)$	Established method		Other specifications
						Type/Principle	Item no.	
TEMPERATURE								
7.1	Temperature sensors	Resistance and semiconductor sensors	Temperature	0,01 °C	0,001 °C	Direct measurement in the triple point of water	STN EN 60751 STN EN 1434-5 (PP-31-02)	SLM *45 *46
				(-80 0) °C	0,04 °C	Comparison with a temperature sensor or thermometer		
				(0 to 100)°C	0,02 °C			
				(100 to 270)°C	0,03 °C			
				(270 to 500) °C	0,1 °C			
				(500 to 660) °C	0,2 °C			
		Paired temperature sensors - a member of heat meters		(0 to 200) °C	0,03 °C			
					0,01 °C *[1]			
		Thermoelectric sensors		(-80 to 270) °C	0,2 °C	comparison with a temperature sensor or thermometer	EURAMET cg-8 STN EN 60584-1 (PP-31-02)	
				(270 to 600) °C	0,5 °C			
				(600 to 1 200) °C	1,5 °C			
7.2	Contact thermometers and devices for generating a temperature field	Direct-indicating thermometers, temperature measuring instruments, temperature transducers *2		(-80 to -40) °C	0,04 °C	comparison with a thermometer or temperature sensor	PP-31-03	SLM, EXT *43 *44 *45
				(-40 to 90) °C	0,03 °C			
				(90 to 270) °C	0,04 °C			
				(270 až 500) °C	0,2 °C			
				(500 to 1 200) °C	1,5 °C			
		temperature calibrators, thermostats and temperature field generation devices		(-80 to -40) °C	0,04 °C	comparison with a thermometer or temperature sensor	PP-31-05	
				(-40 to 90) °C	0,03 °C			
				(90 to 270) °C	0,04 °C			
				(270 to 500) °C	0,2 °C			
				(500 to 1 200) °C	1,5 °C			
7.3	Infrared thermometers			(-20 to 0) °C	1,5 °C	indirect comparison with the thermometer and the black body model	ASTM E2847-13 (PP-31-06)	SLM
				(0 to 30) °C	1,0 °C			
				(30 to 140) °C	0,5 °C			
				(-20 to 0) °C	1,5 °C	direct comparison with the calibrator of infrared thermometers		
				(0 to 30) °C	1,0 °C			
				(30 to 140) °C	0,5 °C			
				(140 to 250) °C	1,0 °C			
				(250 to 500) °C	1,5 °C			

NOTES:
*43 Annex no.43 from the decree of the ÚNMS SR no. 161/2019 Coll.
*44 Annex no.44 from the decree of the ÚNMS SR no. 161/2019 Coll.
*45 Annex no.45 from the decree of the ÚNMS SR no. 161/2019 Coll.
*46 Annex no.46 from the decree of the ÚNMS SR no. 161/2019 Coll.
*[1] for the temperature difference between the sensors included in the pair
*[2] when calibrating transducers (voltage and current output), the expanded uncertainty is arithmetically increased by 0.002% of the transducer range
SLM Internal calibration within SLM laboratory
EXT External calibration outside SLM laboratory

dentificati on	Type of measuring instrument		Calibrated / measured quantity	Measurement range	Expanded uncertainty $U(k = 2)$	Established method		Other specifications
						Type/Principle	Item no.	
HEAT (HEAT ENERGY)								
8.1	Heat meter	Calorimetric meters	Heat	Heat energy in range Θ = (0 to 200) °C $\Delta\Theta$ = (2 to 180) °C	0,8· $\Delta\Theta^{-1}$ %	simulating input physical quantities	STN EN 1434 OIML R75 (PP-31-10)	SLM *46
		Compact, combined and complete heat meters *[3]			6,5· $\Delta\Theta^{-1}$ %	simulation of physical quantities (resistance, frequency) direct temperature measurement, flow meter tested separately		

NOTES:
*46 Annex no.46 from the decree of the ÚNMS SR no. 161/2019 Coll.
*[3] flow meter tested separately, see 2.5
Θ Temperature
$\Delta\Theta$ temperature difference
SLM Internal calibration within SLM laboratory
EXT External calibration outside SLM laboratory

LABORATORY OF ELECTRICAL QUANTITIES, FREQUENCY, TIME

Item no.	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Type of measuring instrument
					Type/Principle	Item no.	
DC VOLTAGE							
9.1	DC voltage meters, calibrators and DC voltage sources	DC volatage	(0 to 0,2) V	4,2 µV/V + 0,4 µV	direct measurement with a standard, direct comparison with the standard, direct comparison with multimeter using artifact	EURAMET cg-15 (P-40-02, PP-40-03)	SLM, EXT
			(0,2 to 2) V	3,5 µV/V + 0,4 µV			
			(2 to 20) V	3,5 µV/V + 3,3 µV			
			(20 to 200) V	5,1 µV/V + 37 µV			
			(200 to 1 050) V	5,1 µV/V + 0,63 mV			
			(1 to 6) kV	0,3 % + 0,5 V	comparison with a standard with a voltage converter using an artifact		SLM
			(1 to 40) kV	0,3 % + 0,5 V	direct measurement with standard		EXT
			(0,2 to 2) V	2 µV/V + 0,2 µV	direct comparison with a voltage reference, direct measurement of the voltage reference output		EXT
			(2 to 20) V	2 µV/V + 2,0 µV			SLM
			(20 to 200) V	5 µV/V			
			0,1 V *[1]	6,0 µV/V			
			1 V	1,5 µV/V			
			10 V	1,5 µV/V			
9.2	Simulators and indicators of thermometers with thermoelectric temperature sensors	Teperature	(-200 to 1 700) °C	0,01 °C *[2]	direct measurement direct comparison comparison with a multimeter using an artifact		SLM, EXT

NOTES:
*[1] the minimum nominal input impedance of the meters 5 GΩ
*[2] depending on the sensor type, thermoelectric sensors typ B, E, J, K, N, R, S, T
SLM Internal calibration within SLM laboratory
EXT External calibration outside SLM laboratory

AC VOLTAGE							
9.3	Measuring instruments measuring AC voltage, calibrators and sources generating AC voltage	AC voltage	(0,01 to 22) mV	0,037 % + 6,1 µV / (10 to 20) Hz	direct measurement with a standard, direct comparison with the standard, direct comparison with multimeter using artifact	EURAMET cg-15 (P-40-02, PP-40-03)	SLM, EXT
				0,014 % + 6,1 µV / (20 to 40) Hz			
				0,013 % + 6,1 µV / (40 to 20 000) Hz			
				0,031 % + 6,1 µV / (20 to 50) kHz			
				0,077 % + 7,6 µV / (50 to 100) kHz			
				0,17 % + 15 µV / (100 to 300) kHz			
				0,22 % + 30 µV / (300 to 500) kHz			
				0,42 % + 30 µV / (0,5 to 1) MHz			
			(22 to 220) mV	0,037 % + 18 µV / (10 to 20) Hz			
				0,014 % + 10 µV / (20 to 40) Hz			
				0,0088 % + 10 µV / (40 to 20 000) Hz			
				0,019 % + 9,2 µV / (20 to 50) kHz			
				0,048 % + 25 µV / (50 to 100) kHz			
				0,11 % + 8,7 µV / (100 to 300) kHz			
				0,22 % + 25 µV / (300 to 500) kHz			
				0,42 % + 52 µV / (0,5 to 1) MHz			

Item no.	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Type of measuring instrument
					Type/Principle	Item no.	
9.3	AC voltage measuring instruments, calibrators and sources generating AC voltage	AC voltage	(0,22 to 2,2) V	0,037 % + 54 µV / (10 to 20) Hz	direct measurement with a standard, direct comparison with the standard, direct comparison with multimeter using artifact	EURAMET cg-15 (P-40-02, PP-40-03)	SLM, EXT
				0,014 % + 17 µV / (20 to 40) Hz			
				0,0065 % + 10 µV / (40 to 20 000) Hz			
				0,010 % + 20 µV / (20 to 50) kHz			
				0,013 % + 45 µV / (50 to 100) kHz			
				0,052 % + 0,11 mV (100 to 300) kHz			
				0,16 % + 0,15 mV / (300 to 500) kHz			
				0,26 % + 0,45 mV (0,5 to 1) MHz			
			(2,2 to 22) V	0,037 % + 0,54 mV / (10 to 20) Hz			
				0,014 % + 0,17 mV / (20 to 40) Hz			
				0,0065 % + 0,058 mV / (40 to 20 000) Hz			
				0,010 % + 0,20 mV / (20 to 50) kHz			
				0,013 % + 0,23 mV / (50 to 100) kHz			
				0,039 % + 0,87 mV / (100 to 300) kHz			
				0,16 % + 1,5 mV / (300 to 500) kHz			
				0,23 % + 4,7 mV / (0,5 to 1 MHz)			
			(22 to 220) V	0,037 % + 5,4 mV / (10 to 20) Hz			
				0,014 % + 1,7 mV / (20 to 40) Hz			
				0,0080 % + 0,79 mV / (40 to 20 000) Hz			
				0,029 % + 1,8 mV / (20 to 50) kHz			
				0,053 % + 8,6 mV / (50 to 100) kHz			
				0,32 % + 51 mV / (100 to 300) kHz			
				1,6 % + 0,036 V / (300 ž 500) kHz			
				2,8 % + 0,33 V / (0,5 to 1) MHz			
			(220 to 1 100) V	0,045 % + 9,1 mV / (20 to 40) Hz			
				0,01 % + 7,6 mV / (40 to 1 000) Hz			
				0,013 % + 22 mV / (1 to 10) kHz *4			
			(1 to 6) kV	0,030 % / 50 Hz	porovnanie s etalónovým meradlom s napäťovým prevodníkom pomocou artefaktu		SLM
			(6 to 28) kV *3	0,50 % / 50 Hz			
			(1 to 28) kV	0,50 % / 50 Hz			EXT

NOTES:
Expanded uncertainty in AC voltage is expressed as expanded uncertainty / frequency range
*3 measuring instruments only to 6 kV
*4 measuring instruments to 1 kHz
SLM Internal calibration within SLM laboratory
EXT External calibration outside SLM laboratory

Item no.	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Type of measuring instrument
					Type/Principle	Item no.	
DC							
9.4	DC measuring instruments, calibrators and sources generating DC	DC	(1 to 100) pA	0,1 %	indirect method using voltage calibrator and resistance standard	EURAMET cg-15 (PP-40-02, PP-40-03)	SLM
			(0,1 to 5) nA	0,01 %			
			(5 to 220) nA	0,003 %			
			(0,22 to 22) µA	0,002 %			
			(0 to 200) µA	16 µA/A + 0,73 nA	direct measurement with a standard, direct comparison with the standard, direct comparison with a multimeter using an artifact, comparison with a multimeter and a current converter		SLM, EXT
			(0,2 to 2) mA	9 µA/A + 3,4 nA			
			(2 to 20) mA	11 µA/A + 32 nA			
			(20 to 200) mA	42 µA/A + 0,91 µA			
			(0,2 to 2,2) A	0,01 % + 18 µA			
			(2,2 to 10) A	0,063 % + 0,63 mA			
			(10 to 20) A	0,11 % + 0,82 mA			
			(20 to 100) A	0,11 % + 4,1 mA			
			(100 to 300) A	0,03 %			
9.4	DC measuring instruments, calibrators and sources generating DC	DC	(10 to 150) A *[4]	0,51 % + 0,14 A	comparison with calibrator and current coil, comparison with a multimeter using an artifact and a current coil	EURAMET cg-15 (PP-40-02, PP-40-03)	SLM, EXT
			(150 to 1 025) A *[4]	0,51 % + 0,27 A			
			(1 to 10) kA *[4]	0,51 % + 0,85 A			
NOTES: *[4] only non-contact ammeters (Hall probe, fluxgate, with optical fibers) SLM Internal calibration within SLM laboratory EXT External calibration outside SLM laboratory							
AC							
9.5	AC measuring instruments, calibrators and sources generating AC	AC	(0,001 to 0,22) mA	0,034 % + 20 nA / (10 to 20) Hz	direct measurement with a standard, direct comparison with the standard, direct comparison with a multimeter using an artifact, comparison with a multimeter and a current converter	EURAMET cg-15 (P-40-02, PP-40-03)	SLM, EXT
				0,022 % + 12 nA / (20 to 40) Hz			
				0,014 % + 10 nA / (40 to 1 0000) Hz			
				0,038 % + 15 nA / (1 to 5) kHz			
				0,15 % + 79 nA / (5 to 10) kHz			
				0,14 % + 43 nA / (10 to 20) kHz*[5]			
				0,93 % + 34 nA / (20 to 100) kHz*[5]			
			(0,22 to 2,2) mA	0,034 % + 39 nA / (10 to 20) Hz			
				0,022 % + 32 nA / (20 to 40) Hz			
				0,014 % + 41 nA / (40 to 1 000) Hz			
				0,027 % + 0,14 µA / (1 to 5) kHz			
				0,15 % + 0,79 µA / (5 to 10) kHz			
				0,14 % + 0,043 µA / (10 to 20) kHz*[5]			
				0,93 % + 0,034 µA / (20 to 100) kHz*[5]			

Item no.	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Type of measuring instrument
					Type/Principle	Item no.	
9.5	AC measuring instruments, calibrators and sources generating AC	AC	(2,2 to 22) mA	0,034 % + 0,39 µA / (10 to 20) Hz	direct measurement with a standard, direct comparison with the standard, direct comparison with a multimeter using an artifact, comparison with a multimeter and a current converter	EURAMET cg-15 (P-40-02, PP-40-03)	SLM, EXT
				0,022 % + 0,32 µA / (20 to 40) Hz			
				0,014 % + 0,41 µA / (40 to 1 000) Hz			
				0,027 % + 0,66 µA / (1 to 5) kHz			
				0,15 % + 5,9 µA / (5 to 10) kHz			
				0,14 % + 6,3 µA / (10 to 20) kHz*[5]			
				0,93 % + 5,3 µA / (20 to 100) kHz*[5]			
			(22 to 220) mA	0,034 % + 3,9 µA / (10 to 20) Hz			
				0,022 % + 3,2 µA / (20 to 40) Hz			
				0,014 % + 2,7 µA / (40 to 1 000) Hz			
				0,027 % + 3,9 µA / (1 to 5) kHz			
				0,15 % + 6,0 µA / (5 to 10) kHz			
				0,14 % + 63 µA / (10 to 20) kHz*[5]			
			(0,22 to 2,2) A	0,033 % + 36 µA / (20 to 40) Hz			
				0,033 % + 36 µA (40 to 1 000) Hz			
				0,06 % + 0,11 mA / (1 to 5) kHz			
				0,94 % + 67 µA / (5 to 10) kHz			
				0,7 % + 0,32 mA / (10 to 20) kHz*[5]			
			(2,2 to 10) A	0,026 % + 1,3 mA / (10 to 1 000) Hz			
				0,089 % + 1,7 mA / (1 to 5) kHz			
				0,18 % + 7,2 mA / (5 to 10) kHz			
				0,68 % + 41 mA / (10 to 20) kHz*[5]			
			(10 to 20) A	0,016 % + 12 mA / (10 to 65) Hz			
				0,029 % + 12 mA / (65 to 300) Hz			
				0,099 % +12 mA/ (300 to 1 000) Hz			
				0,3 % + 38 mA / (1 to 3) kHz			
				0,98 % + 77 mA / (3 to 6) kHz			
				2,9 % +0,12 A / (6 to 10) kHz			
9.5	AC measuring instruments, calibrators	AC	(20 to 120) A	0,016 % + 23 mA / (10 to 65) Hz	direct measurement with a standard,	EURAMET cg-15 (P-40-02, PP-40-03)	SLM, EXT

Item no.	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Type of measuring instrument
					Type/Principle	Item no.	
	and sources generating AC			0,029 % + 35 mA / (65 to 300) Hz	direct comparison with the standard, direct comparison with a multimeter using an artifact, comparison with a multimeter and a current converter		
				0,099 % + 0,12 A / (300 to 1 000) Hz			
				0,30 % + 0, 28 A / (1 to 3) kHz			
				0,98 % + 0,5 A / (3 to 6) kHz			
				3,9 % + 0,87 A / (6 to 10) kHz			
			(120 to 300) A *5	0,05 % / (45 to 65) Hz			
			(10 to 150) A*6	0,29 % + 0,02 A / (45 to 65) Hz	comparison with calibrator and current coil, comparison with a multimeter using an artifact and a current coil		
			(150 to 1 025) A*6	0,29 % + 0,05 A / (45 to 65) Hz			
			(0,1 to 6) kA *6	0,7 % + 0,71 A / (45 to 65) Hz			

NOTES:
Expanded uncertainty in AC is expressed as expanded uncertainty / frequency range
*5 only calibrators and sources
*6 only non-contact ammeters (Hall probe, clamp, Rogowski coils
SLM Internal calibration within SLM laboratory
EXT External calibration outside SLM laboratory

RESISTANCE

9.6	Measuring instruments measuring electrical resistance, calibrators and sources generating electrical resistance, resistance decades, resistance measures	Electrical resistance	(0 to 0,1) mΩ	150 μΩ + 1 nΩ	indirect method using a current source and a voltage meter, indirect comparison with resistance measure (comparison of voltage drop), direct measurement, direct comparison direct comparison with resistance standard, direct comparison with a multimeter using an artifact, indirect method using a voltage source and a current meter	EURAMET cg-15 (PP-40-02, PP-40-03, PP-40-04)	SLM, EXT
			(0,1 to 1) mΩ	100 μΩ/Ω			
			(1 to 10) mΩ	20 μΩ/Ω			
			(10 to 100) mΩ	5 μΩ/Ω			
			(0,1 to 10 000) Ω	3 μΩ/Ω			
			(10 to 20) kΩ	4 μΩ/Ω			
			(20 to 200) kΩ	4 μΩ/Ω			
			(0,2 to 2) MΩ	7 μΩ/Ω			
			(2 to 20) MΩ	15 μΩ/Ω			
			(20 to 200) MΩ	30 μΩ/Ω			
			(0,2 to 2) GΩ	100 μΩ/Ω			
			(2 to 20) GΩ	500 μΩ/Ω			
			(20 to 80) GΩ	2000 μΩ/Ω			
			(0,08 to 1) TΩ	6000 μΩ/Ω			
9.7	Simulators and indicators of thermometers with a resistance temperature sensor	Temperature	(-200 to 850) °C	0,0009 % + 0,003 °C *7	direct measurement, direct comparison direct comparison with multimeter using artifact		

NOTES:
*7 depending on the sensor type, resistance temperature sensors with a nominal resistance at 0 °C in the range (10 to 10 000) Ω.
% from the measured value
SLM Internal calibration within SLM laboratory
EXT External calibration outside SLM laboratory

ELECTRICAL POWER AND ENERGY

Item no.	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Type of measuring instrument
					Type/Principle	Item no.	
9.8	Single-phase and three-phase meters for measuring electric power (apparent, reactive, active) and alternating current energy (apparent, reactive, active), calibrators of electric power and energy and electricity meters	Electrical power and energy	0,01 VA to 82,8 kVA at current (0,01 to 120) A voltage (1 to 300) V frequency 50 Hz	0,03 % from the measured value of electrical power or energy	direct comparison with the standard, direct measurement with a standard	PP-40-08	SLM *49, EXT
			0,005 VA to 82,8 kVAr at current (0,01 to 120) A voltage (1 to 300) V frequency 50 Hz sin φ (-1 to 1)	0,04 % from the measured value of electrical power or energy	direct comparison with the standard, direct measurement with a standard	PP-40-08	
			0,005 W to 82,8 kW at current (0,01 to 120) A voltage (1 to 300) V frequency 50 Hz cos φ (-1 to 1)	0,03 % DC power and energy	direct comparison with the standard, direct measurement with a standard	STN EN 50470 (PP-40-08)	
9.9	Meters for measuring direct electric power and energy, calibrators of direct electric power and energy and electricity	DC power and energy	0 mW to 22 W at current (0 to 0,02) A DC voltage (0,1 to 1100) V DC	30 μW/W + ($1 \cdot 10^{-9} \cdot U$) W	direct comparison with the standard, direct measurement with a standard	PP-40-08	SLM, EXT

Item no.	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Type of measuring instrument
					Type/Principle	Item no.	
	measuring instruments		2 mW to 242 W at current (0,02 to 0,22) A DC Voltage (0,1 to 1100) V DC	60 µW/W + ($1 \cdot 10^{-6} \cdot U$) W			
			22 mW to 2,42 kW at current (0,22 to 2,2) A DC Voltage (0,1 to 1100) V DC	100 µW/W + ($20 \cdot 10^{-6} \cdot U$) W			
			0,22 W to 22 kW at current (2,2 to 20) A DC voltage (0,1 to 1100) V DC	100 µW/W + ($1 \cdot 10^{-3} \cdot U$) W			
			2 W to 110 kW at current (20 to 100) A DC voltage (0,1 to 1100) V DC	110 µW/W + ($5 \cdot 10^{-3} \cdot U$) W			
			10 W to 330 kW at current (100 to 300) A DC voltage (0,1 to 1100) V DC	500 µW/W			
9.10	Measuring instruments and measures of power factor and phase shift	Electrical power, energy	(0 to 1) at current (0,001 to 120) A, voltage í (1 to 300) V, frequency 50 Hz	0,003	direct comparison with the standard, direct comparison with the calibrator	PP-40-08	SLM, EXT
			(0 to 360) ° at current (0,001 to 120) A, voltage (1 to 300) V, frequency 50 Hz	0,3 °			

NOTES:
*49 for the purposes of Annex no. 49 to the decree ÚNMS SR no. 161/2019 Coll.
SLM Internal calibration within SLM laboratory
EXT External calibration outside SLM laboratory
U voltage value

FREQUENCY AND TIME

9.11	Frequency meters	Frequency references	Frequency and time	1 Hz, 1 MHz; 5 MHz; 10 MHz	$1{,}8 \cdot 10^{-11} \cdot f$	direct measurement, direct comparison	40-02 PP-40-03 PP-60	SLM

Item no.	Type of measuring instrument		Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Type of measuring instrument
						Type/Principle	Item no.	
	and measures	Counters, meters measuring frequency and period, generators and calibrators generating frequency and period		0,001 Hz to 225 MHz	$1{,}1 \cdot 10^{-10} \cdot f$	direct measurement, direct comparison		SLM, EXT
9.12	Stopwatches*(1) and time measuring measuring instruments s*(2)			1 µs to 1 h*(2)	$1{,}1 \cdot 10^{-10} \cdot T + 0{,}5$ ns	direct measurement, direct comparison	PP-60-02	SLM, EXT
				23 h, 59 min, 59 s*(1) *(2)	$1{,}0 \cdot 10^{-7} \cdot T + 1{,}2 \cdot d +$ 0,5 ms	direct comparison		
				24 h*(1) *(2)	0,01 s / 24 h	indirect method using a standard reader and a coupling member, comparison with stopwatch calibrator	PP-60-03	SLM, EXT
9.13	Multifunctional testers (tachograph testers, clock speed meters)	Speed simulators (own speed)		(0 to 300) km/h	0,01 km/h	indirect method using a standard reader and a coupling member, comparison with stopwatch calibrator	PP-40-03	SLM, EXT *35
		Hour measuring instruments		(-99 to 99) s/24 h	0,004 s / 24 h	indirect comparison	PP-60-01	
		Vehicle constant measuring instruments		(99 to 99 999) imp/km	0,1 %	indirect method by simulating the vehicle constant using a pulse generator	PP-60-05	
		Pulse counters		(1 to 999 999 999)	1	direct comparison	PP-40-02	

NOTES:
*35 for the purposes of Annex no. 35 to the decree ÚNMS SR no.. 161/2019 Coll.
% from the measured value
f is the frequency value in Hz
T is the time value in s
d is the value of the division
SLM Internal calibration within SLM laboratory
EXT External calibration outside SLM laboratory

DERIVED QUANTITIES

9.14	Measuring instruments and measuring units of strain gauge force and weight sensors		Derived quantities	(0 to 10) mV/V	70 nV/V *[8]	direct measurement of the voltage ratio using a reference multimeter and strain gauge simulator	PP-40-07	SLM
9.15	Electricity quality measuring	Voltage asymmetry of a 3-phase network	Derived quantities	(0 to 10) % At the voltage (1 to 300) V, frequency 50 Hz	0,04 % (the absolute value of the quantity)	direct measurement of the output of the calibrator	PP-40-09	SLM, EXT

Item no.	Type of measuring instrument		Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Type of measuring instrument
						Type/Principle	Item no.	
	instruments	Harmonic interference		(0 to 15) % from the amplitude of the first harmonic for (50 to 1 000) Hz at the voltage of the first harmonic (30 to 300) V, and frequency 50 Hz	0,10 % from the level of the first harmonic			
				(0 to 15) % from the amplitude of the first harmonic for (1 000 to 1 500) Hz at the voltage of the first harmonic (30 to 300) V, and frequency 50 Hz	0,13 % from the level of the first harmonic			
		Inter-harmonic interference		(0 to 15) % z from the amplitude of the first harmonic for (50 to 1 500) Hz at the voltage of the first harmonic (30 to 300) V and frequency 50 Hz	(0,35 to 0,80) % from the level of the first harmonic			
		Total harmonic distortion (THD)		(0 to 40) % at the voltage (30 to 300) V, bandwidth (0 to 1 500) Hz	0,3 % (the absolute value of the quantity)			
		Flicker – Blinking (Pst)		0,5;1 at the voltage 230 V, frequency 50 Hz, CPM (1;2;7;39;110; 1 620;4 000), modulation rectangle	2,5 % from the measured value			
				10 at the voltage 230 V, frequency 50 Hz, CPM (1;2;7;39;110; 1 620;4 000), modulation rectangle	4,7 % from the measured value			

NOTES:
*[8] frequency range DC to 5 kHz
CPM number of events per minute
SLM Internal calibration within SLM laboratory
EXT External calibration outside SLM laboratory

Item no.	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Type of measuring instrument
					Type/Principle	Item no.	
INDUCTANCE							
9.16	Measuring instruments and measures of electrical inductance *[9]	Inductance	1 µH to 10 H	0,06 %	direct measurement of inductance standards	PP-40-05 PP 40-06	SLM
			1 µH to 10 µH	0,12 %	direct measurement, direct comparison		
			10 µH to 100 H	0,06 %			
CAPACITY							
9.17	Measuring instruments and measures of electrical capacity*[9]	Electrical capacity	1 pF to 1 µF	0,015 %	direct measurement of capacity standards	PP-40-05 PP-40-06	SLM
			1 pF to 10 pF	0,12 %	direct measurement, direct comparison		
			10 pF to 50 µF	0,06 %			
			50 µF to 1 mF	$(0,12 + 10,89 \cdot C)$ %			
			1 mF to 10 mF	$(0,17 + 5,18 \cdot C)$ %			
			10 mF to 10 F	$(0,19 + 1,88 \cdot C)$ %			
			100 µF to 10 F *[10]	0,15 %	indirect method using a current calibrator and a multimeter (capacitor charging over time)		
RESISTANCE – AC							
9.18	AC resistance measuring instruments and conductivity measuring instruments and AC resistance measures *9	AC electrical resistance	0,00001 to 10 Ω	0,1 %	indirect method using a current calibrator and a multimeter	PP-40-05 PP-40-06	SLM
			0,1 Ω to 100 Ω	$0,4 \cdot R^{-0,5}$	direct measurement, direct comparison		
			100 Ω to 100 kΩ	0,06 %			
			100 kΩ to 10 MΩ	0,12 %			

NOTES:
*[9] measurement range and expanded uncertainty is frequency dependent, frequency range 20 Hz to 100 kHz.
*[10] measured by DC
% from the measured value
C capacity value v F
R electrical resistance value (AC) v Ω
SLM Internal calibration within SLM laboratory
EXT External calibration outside SLM laboratory

LABORATORY OF ACOUSTICS

Item no.	Type of measuring instrument	Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Other specifications
					Type/Principle	Item no.	
ACOUSTIC QUANTITIES							
9.19	Audiometers	Frequency	50 Hz to 20 kHz	0.1% of the value of the measured frequency	direct measurement	EN 60645-1 (PP-61-01)	SLM, EXT *54
		Total harmonic distortion (THD)	(0 to 20) %	0.5% (absolute THD value)	direct measurement		
		Sound pressure level (SPL)	(20 to 120) dB at the frequency 125 Hz to 4 kHz	0,7 dB	direct measurement		
			(20 to 120) dB at the frequency 4 kHz to 8 kHz	1,2 dB			
		Sound pressure level (SPL) - masking noise	(20 to 120) dB at the frequency 125 Hz to 4 kHz	1,0 dB	direct measurement		
			(20 to 120) dB at the frequency 4 kHz to 8 kHz	1,5 dB			
		Vibration Force Level (FL)	(20 to 70) dB at the frequency 250 Hz to 4 kHz	1,5 dB	direct measurement		
			(20 to 70) dB at the frequency 4 kHz to 8 kHz	2,0 dB			
		Divider attenuation	in the range of sound pressure level (-10 to 0) dB	0,5 dB	direct measurement		
			in the range of sound pressure level (0 to 40) dB	0,4 dB			
			in the range of sound pressure level (40 to 120) dB	0,2 dB			

NOTES:
*54 Annex no.54 from the decree of the ÚNMS SR no. 161/2019 Coll.
SLM internal calibration within SLM laboratory
EXT external calibration outside SLM laboratory

LABORATORY OF PHYSICAL-CHEMICAL QUANTITIES

Item no.	Type of measuring instrument		Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Other specifications
						Type/Principle	Item no.	
INDEX OF REFRACTION								
10.1	Reference material for refractometery		Index of refraction	Index of refraction (1,28 to 1,81)	5.10^{-5}	optical method indirect comparison	OIML R 108 OIML R 124 (PP-72-01)	SLM
10.2	Refractometers			Index of refraction (1,3 to 1,7)	$0{,}8.10^{-4}$	optical method indirect comparison	STN 99 7345 (PP-72-02)	SLM *59
				percentage of sugar (0 to 95) %	(0,1 to 0,5) %			
pH								
10.3	Reference material for pH-metry		pH	(1,679 to 10,000) pH	0,015 pH	indirect comparison using CRM	OIML R 54 STN 65 0305 STN 99 9000 (PP-70-01)	SLM
10.4	pH-metres			(1 to 13) pH	0,02 pH	direct comparison using CRM	STN 65 0305 STN 99 9000 (PP-70-02)	SLM EXT
				-2 000 mV to 2 000 mV	0,01 mV	indirect method		
CONDUCTIVITY								
10.5	Reference material for conductometry		Conductivity	(0,005 to 2,00) $S \cdot m^{-1}$	(0,0005 + 0,003·κ) $S \cdot m^{-1}$	direct measurement using RLCG of the bridge and conduction cells	OIML R 56 (PP-70-03)	SLM
10.6	Conductometers			(0,005 to 2,00) $S \cdot m^{-1}$	(0,0008 + 0,003·κ) $S \cdot m^{-1}$	direct comparison using RM	OIML R 68 (PP-70-04)	SLM EXT
MOISTURE								
10.7	Moisture meters for cereals, oilseeds and legumes		Moisture	Relative humidity (5 to 45) %	Relative humidity 0,3 % *	indirect comparison by gravimetric method	OIML R 59 STN 46 1025 STN ISO 7700-1 (PP-74-01)	SLM EXT *60
10.8	Moisture meters of solid substances			Relative humidity (7 to 20) %	Relative humidity 0,4 % *	indirect comparison by gravimetric method	OIML R 92 STN EN 13 183-1 (PP-74-02)	SLM
					Relative humidity 1,8 %	indirect comparison by the electrical resistance simulation method		
10.9	Relative humidity meters			Relative humidity (10 to 70) % (>70 to 95) %	Relative humidity 1,5 % 2,0 %	direct comparison with standard humidity sensor	PNÚ 3410.2 (PP-70-05)	SLM EXT
CHEMICAL COMPOSITION								
10.10	Analyzers	exhaust gases	Chemical quantities	Volume fraction CO (0,425 to 4,025) %	Volume fraction 0,01 %	direct comparison with CRM	OIML R 99 STN 99 9701 (PP-75-02)	SLM EXT *61
				Volume fraction CO_2 (5,1 to 16,1) %	Volume fraction 0,1 %			
				Volume fraction HC (85 to 1 150)·10^{-6}	Volume fraction 5.10^{-6}			
		breath		(0 to 1,4) $mg \cdot l^{-1}$	(0,001 to 0,025) $mg \cdot l^{-1}$		STN 99 6501 OIML R 126 (PP-75-01)	SLM *62

Item no.	Type of measuring instrument		Calibrated / measured quantity	Measurement range	Expanded uncertainty U (k = 2)	Established method		Other specifications
						Type/Principle	Item no.	
DENSITY								
10.11	Density meters	Laboratory hydrometers	Density	(600 to 2 000) kg·m^{-3}	(0,06 to 0,2) kg·m^{-3} **	hydrostatic weighing	OIML R 44 OIML G 14 STN 25 7616 STN 25 7619 STN 25 7621 (PP-71-01)	SLM *56, 57
		Muster gauges		(10 to 30) kg·hl^{-1}	0,1 kg·hl^{-1}			
		Sugar meters		Mass fraction (0 to 25) %	Mass fraction 0,05 %			
		Alcohol meters		Volume fraction (0 to 100) %	Volume fraction (0,03 to 0,08) %			

NOTES:

*59	Annex no.59 from the decree of the ÚNMS SR no. 161/2019 Coll.
*60	Annex no.60 from the decree of the ÚNMS SR no. 161/2019 Coll.
*61	Annex no.61 from the decree of the ÚNMS SR no. 161/2019 Coll.
*62	Annex no.62 from the decree of the ÚNMS SR no. 161/2019 Coll.
*57	Annex no.57 from the decree of the ÚNMS SR no. 161/2019 Coll.
*	absolute value
**	the uncertainty depends on the scale value
κ	hodnota konduktivity
CRM	certified reference materialRM reference material
RLCG	resistive, inductive, capacitive, conductive
SLM	internal calibration within SLM laboratory
EXT	external calibration outside SLM laboratory