

## ACCREDITATION CERTIFICATE

### No. LA.02.004

Lithuanian National Accreditation Bureau hereby certifies that

complies with the requirements of

**Lithuanian energy institute Laboratory of  
heat-equipment research and testing**

**LST EN ISO/IEC 17025:2018**

legal entity: Lietuvos energetikos institutas  
legal entity code: 111955219

and is competent to perform:

**calibration of measuring equipment**

The scope of accreditation below is an integral part of this certificate. Locations of the conformity assessment body are specified in the scope of accreditation

Initial accreditation date:: 1997-01-10

Certificate issued / valid since: 2025-08-06

Version of: 2025-07-07

Expiry date: 2030-08-05

Director



DALIA BALEŽENTĖ

The certificate may be changed, its validity suspended or withdrawn by the decision of the National Accreditation Bureau. Information on the actual data of accreditation certificates may be verified at nab.lv.lt





## SCOPE OF ACREDITATION

**Lithuanian energy institute Laboratory of heat-equipment research and testing**, accredited in accordance with LST EN ISO/IEC 17025:2018

Location of the conformity assessment body:

**Breslaujos str. 3, 44403 Kaunas**

### Calibration and measurement capability (CMC) expressed as:

Measurand	Reference number of calibration method or procedure	Type of instrument to be calibrated	Measurement range and additional parameters (where applicable)	Measurement uncertainty
Air (gas) velocity	KM-1E-MP01:2019, Edition 4	Anemometers and Pitot tubes	from 0.05 m/s to 015 m/s > 0.15 m/s to 1 m/s > 1 m/s to 60 m/s	$[(0.23 / R) + 3.4] \%$ $[(0.52 / R) + 1.3] \%$ $[(1.5 / R) + 0.39] \%$
	KM-1E-0001:2019, Edition 4	Air velocity meters calibration facilities (calibration in the laboratory)	from 0.05 m/s to 0.15 m/s > 0.15 m/s to 1 m/s > 1 m/s to 60 m/s	$[(0.23 / R) + 3.4] \%$ $[(0.52 / R) + 1.3] \%$ $[(1.5 / R) + 0.39] \%$
	KM-1E-0002:2019, Edition 2	Air velocity meters calibration facilities (calibration on site)	from 0.5 m/s to 5 m/s > 5 m/s to 40 m/s	$[(0.72 / R) + 0.66] \%$ $[(1.65 / R) + 0.47] \%$
Air (gas) volume and flow rate	KM-2E/1B-MP01:2025, Edition 2	Air (gas) flowmeters	from 0.0003 m <sup>3</sup> /h to 0.3 m <sup>3</sup> /h	0.45 %
	KM-2E/1-MP01:2020, Edition 2		from 0.016 m <sup>3</sup> /h to 16 m <sup>3</sup> /h	0.13 %
	KM-2E/2-MP01:2025, Edition 3	Air (gas) meters and flowmeters	from 5.7 m <sup>3</sup> /h to 308.8 m <sup>3</sup> /h	0.16 %
	KM-2E/3-MP01:2020, Edition 3		from 1 m <sup>3</sup> /h to 1600 m <sup>3</sup> /h > 1600 m <sup>3</sup> /h to 9700 m <sup>3</sup> /h	0.25 % 0.30 %
	KM-2E/3A-MP02:2025, Edition 3, based on LST EN 12405-1:2021	Gas volume conversion devices	---	Conversion factor uncertainty 0.15 %
	KM-2E/1-0001:2019, Edition 2	Bell type provers (calibration in the laboratory)	from 0.016 m <sup>3</sup> /h to 16 m <sup>3</sup> /h	0.13 %
		Bell type provers (calibration on site)	from 0.016 m <sup>3</sup> /h to 16 m <sup>3</sup> /h	0.25 %



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Air (gas) volume and flow rate	KM-2E/2-0001:2025, Edition 4	Facilities with critical nozzles (calibration in the laboratory)	from 5.7 m <sup>3</sup> /h to 308.8 m <sup>3</sup> /h	0.16 %
		Facilities with critical nozzles (calibration on site))	from 0.016 m <sup>3</sup> /h to 16 m <sup>3</sup> /h	0.35 %
	KM-2E/3-0001:2019, Edition 3	Facilities with reference meters (calibration in the laboratory)	from 1 m <sup>3</sup> /h to 1600 m <sup>3</sup> /h > 1600 m <sup>3</sup> /h to 9700 m <sup>3</sup> /h	0.25 % 0.30 %
		Facilities with reference meters (calibration on site)	from 0.25 m <sup>3</sup> /h to 650 m <sup>3</sup> /h	0.25 %
Water volume, mass and volume flow rate	KM-3E-MP02:2025, Edition 3	Mechanical, magnetoinductive, ultrasonic, vortex and mass meters	Volume: from 5 dm <sup>3</sup> to 1500 dm <sup>3</sup> Flowrate: from 0.01 m <sup>3</sup> /h to 100 m <sup>3</sup> /h Water temperature: from 20 °C to 50 °C	(0.054 + 0.019·10 <sup>-3</sup> ×R) %
		Fow rate meters	Mass: from 5 kg to 1500 kg Flowrate: from 0.01 kg/h to 100 kg/h Water temperature: from 20 °C to 50 °C	(0.048 + 0.015 10 <sup>-3</sup> ×R) %
Heat content	KM-3E-MP02:2025, Edition 3	Meters with mechanical, magnetoinductive, ultrasonic and vortex flowmeters	Flowrate: from 0.10 m <sup>3</sup> /h to 100 m <sup>3</sup> /h Water temperature: from 20 °C to 50 °C Flowrate: from 0.01 m <sup>3</sup> /h to 100 m <sup>3</sup> /h Temperature difference, Δθ from 3 °C to 150 °C	$\left(\frac{4.3}{\Delta\theta} + 0.35\right)^{0.5} - 0.38$ %
Water volume/flow rate, heat content	KM-3E-0001:2025, Edition 3	Calibration devices for water and heat meters (in the laboratory)	Flowrate: from 0.01 m <sup>3</sup> /h to 100 m <sup>3</sup> /h Temperature difference, Δθ from 3 °C to 150 °C	Volume: (0.054 + 0.019·10 <sup>-3</sup> × R) % Debit: (0.10 + 0.2 10 <sup>-3</sup> × R) % Heat content: $\left(\frac{4.3}{\Delta\theta} + 0.35\right)^{0.5} - 0.38$ %
		Calibration devices for water and heat meters (on site)	Flowrate: from 0.01 m <sup>3</sup> /h to 100 m <sup>3</sup> /h Temperature difference, Δθ from 3 °C to 150 °C	Volume – 0.10 % Flowrate: - 0,15 % Heat content: $\left(\frac{4.3}{\Delta\theta} + 0.38\right)^{0.5} - 0.35$ %
Volume of liquids other than water	KM-4E-MP01:2025, Edition 4, based on EURAMET Calibration Guide No. 21 v. 3.0 Volumetric method	Dynamic measuring systems/meters for liquids other than water	Volume: from 500 dm <sup>3</sup> to 5000 dm <sup>3</sup> , Flowrate: from 1.0 m <sup>3</sup> /h to 150 m <sup>3</sup> /h	(0.06 + 0.1·10 <sup>-5</sup> × R) %
	KM-4E-MP01:2025, Edition 4, based on EURAMET Calibration Guide No.19 v. 3.0 Gravimetric method		Volume: from 500 dm <sup>3</sup> to 1500 dm <sup>3</sup> , Flowrate: from 1.0 m <sup>3</sup> /h to 50 m <sup>3</sup> /h	(0.04 + 0.25·10 <sup>-6</sup> × R) %
	KM-4E-MP01:2025, Edition 4, Method of comparison with a mobile reference meter		Volume: from 500 dm <sup>3</sup> to 5000 dm <sup>3</sup> , Flowrate: from 1.0 m <sup>3</sup> /h to 135 m <sup>3</sup> /h	0.12 %



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Gauge pressure	KM-5E-MP01:2025, Edition 5, based on EURAMET Calibration Guide No.17 v. 4.1 KM-5E-MP02:2025, Edition 2, based on EURAMET/cg-3 v. 2.0	Pressure balance, mechanical and electromechanical gauge pressure and differential pressure gauges and transducers	from -100 kPa to -3.0 kPa (gas)	$(4.68 + 3.31 \cdot 10^{-5} \times p_{vak})$ Pa
			from 0.15 Pa to 1.99 Pa (gas)	0.012 Pa
			from 2 Pa to 20 Pa (gas)	0.029 Pa
			from 20 Pa to 45 Pa (gas)	0.10 Pa
			from 50 Pa to 125 Pa (gas)	0.11 Pa
			from 160 Pa to 200 Pa (gas)	0.12 Pa
			from 250 Pa to 315 Pa (gas)	0.13 Pa
			360 Pa (gas)	0.14 Pa
			from 0.4 kPa to 25 kPa (gas)	$(0.1 + 0.12 \cdot 10^{-3} \times p)$ Pa
			from 8 kPa to 500 kPa (gas)	$(0.50 + 1.30 \cdot 10^{-5} \times p)$ Pa
			from 0.5 MPa to 10 MPa (gas)	$(12.8 + 2.17 \cdot 10^{-5} \times p)$ Pa
			from 0.5 MPa to 50 MPa (liquid)	$(106.2 + 1.8 \cdot 10^{-5} \times p + 3 \cdot 10^{-13} \times p^2)$ Pa
Absolute pressure	KM-5E-MP01:2025, Edition 5, based on EURAMET Calibration Guide No.17 v. 4.1 KM-5E-MP02:2025, Edition 2, based on EURAMET/cg-3 v. 2.0	Pressure balance, mechanical and electromechanical absolute pressure gauges and transducers	from 50 MPa to 500 MPa (liquid)	$(183.54 + 3.2 \cdot 10^{-5} \times p + 1 \cdot 10^{-13} \times p^2)$ Pa
			from 8 kPa to 350 kPa (gas)	$(0.50 + 1.65 \cdot 10^{-5} \times p)$ Pa
			from 0.35 MPa to 7 MPa (gas)	$(12.8 + 2.43 \cdot 10^{-5} \times p)$ Pa
			from 0.5 MPa to 50 MPa (liquid)	$(106.3 + 1.8 \cdot 10^{-5} \times p + 3 \cdot 10^{-13} \times p^2)$ Pa
Temperature	KM-6E-MP01:2025, Edition 3, based on OIML R 84:2003	Resistance thermometers	from 50 MPa to 500 MPa (liquid)	$(183.56 + 3.2 \cdot 10^{-5} \times p + 1 \cdot 10^{-13} \times p^2)$ Pa
			from -30 °C to 200 °C	0.05 °C
Temperature	KM-6E-MP01:2025, Edition 3, based on OIML R 84:2003	Resistance thermometers	from -30 °C to 0 °C	$(0.032 + 0.0006 \times R)$ °C
			> 0 °C to 200 °C	$(0.032 + 0.00004 \times R)$ °C
Air humidity	KM-12E-MP01:2020, Edition 3, based on EURAMET Calibration Guide No. 20 v. 5.0	Climatic chambers	from -30 °C to 100 °C	0.40 °C
			from 11 % RH to 98 % RH Air temperature from 15 °C to 50 °C	$(0.60 + 0.0072 \times R)$ % RH
Air humidity	KM-9E-MP01:2025, Edition 5, based on EURAMET Calibration Guide No. 20 v. 5.0	Humidity meters	from 11 % RH to 98 % RH Air temperature from 15 °C to 50 °C	1.50 % RH
			from 11 % RH to 98 % RH Air temperature from 15 °C to 50 °C	1.50 % RH



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Volume	EURAMET Calibration Guide No. 20 v. 5.0			
	KM-7E-MP01:2025, Edition 4, based on EURAMET Calibration Guide No.19 v. 3.0	Standard capacity measures	20 l	4.8 ml
	Gravimetric method		50 l	11 ml
	KM-7E-MP01:2025, Edition 4, based on EURAMET Calibration Guide No. 21 v. 3.0		100 l	16 ml
	Volumetric method		200 l	22 ml
			1000 l	200 ml
			500 l	0.24 l
			1000 l	0.30 l
			2000 l	0.60 l
			3000 l	1.0 l
			5000 l	2.5 l

Where R - calibration gauge reading; p - pressure to be measured, Pa; ; pvak - measured vacuum pressure, Pa

Note. In case of any discrepancies, ambiguities or disputes regarding the subject matter content between the English and Lithuanian versions of the document, the Lithuanian version shall prevail.

The accreditation certificate is signed with a qualified electronic signature as an attachment to the order of the Director of the National Accreditation Bureau, by which it was approved