

Hellenic Accreditation System



Annex F2/12 to the Certificate No. **559-5**

SCOPE of ACCREDITATION

of the
Calibration Laboratory
of
DEKA S.A.

Measurand / Calibration item	Range of measurement	Calibration & Measurement Capability (k=2)*	Remarks
Temperature measurements			
Temperature/ Analog and digital direct reading thermometers	[-78,5] °C	0,13 °C	Calibration method based on COFRAC LAB GTA 08: 2012.
	[-40 ... 250) °C	0,047 °C	
	[250 ... 420) °C	0,17 °C	
	[420 ... 600) °C	1,3 °C	
	[600 ... 1000] °C	1,8 °C	Calibration method based on COFRAC LAB GTA 08: 2012. Calibration is performed on site.
	[-78,5] °C	0,13 °C	
	[-30 ... 150) °C	0,10 °C	
	[150 ... 420] °C	0,17 °C	
Temperature/ Liquid-in-glass thermometers of total and partial immersion	[-40 ... 250] °C	0,047 °C	Calibration method based on NIST guide "Liquid in – Glass Thermometer Calibration Service", 1988
Temperature/ Analog and digital direct reading thermometers for measurements of air temperature, temperature data loggers	[-40 ... 5) °C	0,36 °C	Comparison method.
	[5 ... 15) °C	0,31 °C	Comparison method. Calibration can also be performed on site.
	[15 ... 35) °C	0,16 °C	
	[35 ... 50] °C	0,27 °C	
	(50 ... 70] °C	0,36 °C	Comparison method.
Temperature / Temperature transmitters with analog signal output in mA or V	[-40 °C ... 250] °C	0,050 °C	Calibration method based

Measurand / Calibration item	Range of measurement	Calibration & Measurement Capability (k=2)*	Remarks
connected with temperature sensor			on DKD-R 5-1:2018.
Temperature / Temperature transmitters with analog signal output in mA or V connected with temperature sensor for measurements of air temperature	[-40 ... 5] °C	0,40 °C	Calibration method based on DKD-R 5-1:2018.
	[5 ... 15] °C	0,31 °C	
	[15 ... 35] °C	0,16 °C	
	[35 ... 50] °C	0,27 °C	
	(50 ... 70] °C	0,40 °C	
Temperature/ Climatic and isothermal chambers, Ovens Incubators and sterilization furnaces Refrigerators, Freezers, with internal volume up to 2000 l, with or without air circulation	[-40 ... 20] °C	0,20 °C	According to DKD-R 5-7: 2018 using Pt 100 sensors. Calibration is performed in the whole volume or at selected points of the chamber. Calibration can also be performed on site.
	[20 ... 140] °C	0,10 °C	
	[140 ... 250] °C	0,20 °C	
Relative humidity measurements			
Relative humidity / Analog and digital hygrometers, humidity data loggers Humidity transmitters with analog signal output in mA or V, connected with humidity sensor	[15 ... 30] % RH	1,0 % RH	Calibration method based on NPL guide "A guide to the measurement of humidity", 1996. <u>Calibration is performed at 25 °C.</u> Calibration can also be performed on site.
	[30 ... 75] % RH	1,3 % RH	
	[75 ... 95] % RH	1,6 % RH	
Relative humidity / Analog and digital hygrometers, humidity data loggers Humidity transmitters with analog signal output in mA or V, connected with humidity sensor	[15 ... 30] % RH	1,0 % RH	Calibration method based on NPL guide "A guide to the measurement of humidity", 1996. <u>Calibration is performed at 40 °C.</u> Calibration can also be performed on site.
	[30 ... 75] % RH	1,5 % RH	
	[75 ... 95] % RH	1,8 % RH	

Measurand / Calibration item	Range of measurement	Calibration & Measurement Capability (k=2)*	Remarks
Pressure measurements			
Pressure/ Analog and digital positive or negative relative pressure gauges of direct reading (gas medium)	[-100 ... -12,5] kPa	50 Pa	Calibration according to DKD-R 6-1:2014. Calibration can also be performed on site.
	[-1000 ... -125] Pa	1,2 Pa	
	[-100 ... -12,5] Pa	0,35 Pa	
	(12,5 ... 100] Pa	0,35 Pa	
	[125...1000] Pa	1,3 Pa	
	12,5 Pa	[3 ... 25] kPa	
	[25 ... 40] kPa	20 Pa	
	[40 ... 130] kPa	11 Pa	
	[130 ... 400] kPa	$(8 \cdot 10^{-5} \cdot p)$ kPa p in kPa	
	[400 ... 1250] kPa	0,10 kPa	
(1,25 ... 4,0] MPa	$(8 \cdot 10^{-2} \cdot p)$ kPa p in MPa		
Pressure/ Analog and digital relative pressure gauges of direct reading (deionized water medium)	[1,25 ... 4) MPa	$(8 \cdot 10^{-2} \cdot p)$ kPa p in MPa	Calibration according to DKD-R 6-1:2014. Calibration can also be performed on site.
	[4 ... 6) MPa	3,0 kPa	
	[6 ... 10) MPa	5,0 kPa	
	[10 ... 16) MPa	8,0 kPa	
	[16 ... 20) MPa	10 kPa	
	[20... 40) MPa	20 kPa	
	[40 ... 100] MPa	50 kPa	
Pressure/ Analog and digital relative pressure gauges of direct reading (oil medium)	[1 ... 10) MPa	$(6,9 \cdot 10^{-5} \cdot p + 1,4 \cdot 10^{-4})$ MPa p in MPa	Calibration according to DKD-R 6-1:2014, using pressure balance (DWT).
	[10 ... 100] MPa	$(1,3 \cdot 10^{-4} \cdot p - 1,0 \cdot 10^{-3})$ MPa p in MPa	
Pressure/ Analog and digital absolute pressure gauges, including barometers, of direct reading (gas medium)	[5 ... 80] kPa abs	80 Pa	Calibration according to DKD-R 6-1:2014.
	[80 ... 120] kPa abs	20 Pa	

Measurand / Calibration item	Range of measurement	Calibration & Measurement Capability (k=2)*	Remarks
	[120 ... 160) kPa abs	80 Pa	
	[0,16 ... 1,6] MPa abs	0,80 kPa	

* Where uncertainty is accompanied by the corresponding unit, it is absolute, while where it is not accompanied by a unit, it is relative.


Site of assessment: **Permanent laboratory premises, 40 Polydefkous str., 18545 Piraeus, Greece.**

Approved Signatories: **S. Kritikos, A. Limniatis, P. Mermigkas, V. Paroutsas**

This Scope of Accreditation replaces the previous one dated 5.08.2020.

The Accreditation Certificate No. **559-5**, to ELOT EN ISO/IEC 17025:2017, is valid until 31.05.2025.

Athens, 31.05.2021



Spyridon Podaras
CEO of ESYD