



Status September 2022

HORIBA Europe GmbH with its laboratory for exhaust gas measurement technology in Oberursel carries out calibrations of measuring instruments and sensors for the measurands and measuring ranges specified during accreditation. The DAkkS/DKD calibration certificates issued in accordance with the accreditation are proof of traceability to national standards, such as those required by the DIN EN ISO 9001 and DIN EN ISO/IEC 17025 family of standards.

On a regular basis, the German Accreditation Body GmbH confirms that the calibration laboratory of HORIBA Europe GmbH with the laboratory for exhaust gas measurement technology in Oberursel has the competence according to DIN EN ISO/IEC 17025:2018 to perform accredited calibrations both in the permanent laboratory and on-site at the customer's location. This applies to the following areas:

## On-site calibration

Calibration object	Range		Procedure	Smallest measurement uncertainty that can be specified *)
<b>Pressure</b>				
Absolute pressure gauge	0,6...1,1bar	Gas pressure medium	DKD-R 6.1	± 0,68 mbar
Overpressure gauge	0...100 mbar	Gas pressure medium	DKD-R 6.1	0...70mbar: ±0,06mbar >70...100mbar: ±0,18mbar
<b>Temperature</b>				
Resistance thermometers and direct reading thermometers with resistance sensors  Pt100, Pt1000 etc.	-20...+155°C	Comparison calibration with resistance thermometer in block calibrators	DKD-R 5.1	-20...<0°C: ±0,45K  0...+100°C: ±0,22K  >+100...+155°C: ±0,45K

\*) Please note that the smallest measurement uncertainty that can be specified cannot necessarily be realized on every calibration object and may be less favorable in the specific application.

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Absolute pressure gauge	0,6...1,1bar	Gas pressure medium	DKD-R 6.1	± 0,68 mbar
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<b>Number of particles concentration</b>				
Condensation particle counter (CPC)	200...10000 1/cm <sup>3</sup>	Particle size 23 to 100nm	ISO 27891	±8,0 %
Particle Number Concentration to determine the Particle Number Concentration Reduction Factor (PCRF).	PCRF 150...3000	VPR Particle size 30 to 100nm PCRF	UNECE R83	±8,77 %
<b>Relative humidity</b>				
Electrical hygrometers and humidity sensors	10...90%rF	Comparative measurement in humidity generator Air temperature:23 °C	DKD-R 5.8	1,7 % rF
<b>Temperature</b>				
Resistance thermometers and direct reading thermometers with resistance sensors Pt100, Pt1000 etc.	-20...+155°C	Comparison calibration with resistance thermometer in block calibrators	DKD-R 5.1	-20...<0°C: ±0,45K 0...+100°C: ±0,22K >+100...+155°C: ±0,45K
Resistance thermometers and direct reading thermometers with resistance sensors Pt100, Pt1000 etc.	-0...+60°C	Comparative calibration with resistance thermometer in humidity generator	DKD-R 5.1	0,39 K

\*) Please note that the smallest measurement uncertainty that can be specified cannot necessarily be realized on every calibration object and may be less favorable in the specific application.

# HORIBA

## WOZU DIENT EIN KALIBRIERLABOR?

### WHAT IS THE REASON FOR A CALIBRATION LABORATORY?

Measurement and control technology is a field of industry in which the greatest possible precision of results is a fundamental part of the work. The calibration of the various sensors and measuring instruments in the calibration laboratory is of central importance here for reliable and reproducible measurement results. Calibration is defined in the dictionary of metrology (= teaching and science of measurement) as: "Activity which, under specified conditions, in a first step establishes a relationship between the quantity values provided by standards with their measurement uncertainties and the corresponding indications with their associated measurement uncertainties, and in a second step uses this information to establish a relationship by means of which a measurement result is obtained from an indication." Calibration of test and measurement systems in the calibration laboratory is essential to ensure the function and accuracy of the measuring equipment. In the calibration laboratory, all the necessary instruments, machines and software components are grouped together and placed in an optimized working context. The calibration laboratory as a workspace is the central place where all components and competencies are bundled that serve to ensure the reliability of measuring equipment. Here, particularly high standards apply to the environmental conditions, such as temperature and humidity, in order to make the measurements as accurate and standardized as possible. The tests must be carried out at regular intervals, depending on the type and design of the test equipment. Measuring equipment that has been repaired or serviced must also be retested in the calibration laboratory.

## CONTACT

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