

Accredited entity according to ČSN EN ISO/IEC 17025:2018:

M & B Calibr, spol. s r.o.
CAB number 2301, Calibration Laboratory
Krumlovská 1454/26, 664 91 Ivančice

Calibration laboratory locations:

1. **Calibration Laboratory** Krumlovská 1454/26, 664 91 Ivančice
2. **Calibration Laboratory** Strojírenská 259/16, Zličín, 155 21 Praha 5

CMC for the field of measured quantity: Length

| Ord. number ¹ | Calibrated quantity / Subject of calibration | Nominal range | | | | Parameter(s) of the meas. quantity | Lowest expanded measurement uncertainty specified ² | Calibration principle | Calibration procedure identification ³ | Work-place |
|--------------------------|--|---------------|------|----------|---------|------------------------------------|--|-----------------------|---|------------|
| | | min. | unit | max. | unit | | | | | |
| 1 | Steel parallels | 0.5 mm | to | 1,000 mm | | (2L + 0.2) μm | Comparative measurement using steel parallels | KP D1 | 1 | |
| 2* | Steel length gauges | 0 m | to | 2 m | | 60 μm | Comparative measurement using steel parallels | KP D2 | 1,2 | |
| | Steel tape measures | 2 m | to | 5 m | | 180 μm | | | | |
| 3 | Tape measures | 0 m | to | 2 m | | 0.14 mm | Comparative measurement on a reference track | KP D3 | 1,2 | |
| | | 2 m | to | 3 m | | 0.28 mm | | | | |
| | | 3 m | to | 5 m | | 0.42 mm | | | | |
| | | 5 m | to | 8 m | | 0.70 mm | | | | |
| | 8 m | to | 10 m | | 0.98 mm | | | | | |
| Laser distance meters | 0 m | to | 5 m | | 0.2 mm | | | | | |
| 4 | Limit and end measuring rings | 0 m | to | 10 m | | 0.4 mm | Direct and comparative measurement by a distance meter | KP D4 | 1 | |
| | | 10 m | to | 20 m | | 0.6 mm | | | | |
| | | 20 m | to | 50 m | | 1.0 mm | | | | |
| | | 50 m | to | 100 m | | 2.2 mm | | | | |
| | | 1 mm | to | 100 mm | | (2L + 0.5) μm | | | | |
| | | 100 mm | to | 500 mm | | (2L + 2.4) μm | | | | |
| | | 1 mm | to | 200 mm | | (4L + 1.3) μm | | | 2 | |

**The Appendix is an integral part of
Certificate of Accreditation No. 64/2024 of 14/02/2024**

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CAB number 2301, Calibration Laboratory
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| Ord. number ¹ | Calibrated quantity / Subject of calibration | Nominal range | | | | Parameter(s) of the meas. quantity | Lowest expanded measurement uncertainty specified ² | Calibration principle | Calibration procedure identification ³ | Work-place |
|--------------------------|--|---------------|------|----------|-----------------------|------------------------------------|--|-----------------------|---|------------|
| | | min. | unit | max. | unit | | | | | |
| | Limit snap gauges | 1 mm | to | 100 mm | | (2L + 0.5) μm | | | 1,2 | |
| | | 100 mm | to | 500 mm | | (2L + 2.4) μm | | | | |
| | Feeler gauges | 0.02 mm | to | 100 mm | | (2L + 0.5) μm | | | | |
| | Limit cylindrical gauges | 100 mm | to | 500 mm | | (2L + 2.4) μm | | | | |
| 5* | Feeler gauges, Limit cylindrical gauges. | 1 mm | to | 125 mm | | (2L + 2.4) μm | Direct measurement by a micropasameter | KP D4 | 1 | |
| 6 | Limit plug gauges | 1 mm | to | 200 mm | | (3L + 3) μm | Direct measurement by a distance meter | KP D5 | 1,2 | |
| | | 1 mm | to | 160 mm | | (1L + 4) μm | Direct measurement on MasterScanner XP 16060 | | 1 | |
| | Threaded rings | 1 mm | to | 3 mm | | (3L + 3) μm | Comparison by a wear pin gauge | | 1 | |
| | | 2.5 mm | to | 200 mm | | (3L + 3) μm | Comparative measurement by a distance meter | | | |
| | | 3 mm | to | 160 mm | | (1L + 4) μm | Direct measurement on MasterScanner XP 16060 | | | |
| 7* | Limit plug gauges | 1 mm | to | 125 mm | | (3L + 3.5) μm | Direct measurement by a micropasameter | KP D5 | 1 | |
| 8* | Slide gauges: slide rules, depth gauges, height gauges | 0 mm | to | 1,000 mm | | 12 μm | Comparative measurement using steel parallels | KP D6 | 1,2 | |
| | | 1,000 mm | to | 3,000 mm | | 20 μm | | | | |
| 9* | Micrometer gauges: micrometers, pasameters, micropasameters, micrometer heads, micrometer depth gauges | 0 mm | to | 25 mm | Division 0.0001 mm | 0.7 μm | Comparative measurement using steel parallels | KP D7 | 1,2 | |
| | | 0 mm | to | 100 mm | | 1.4 μm | | | | |

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| | | min. | unit | max. | unit | | | | | |
| | | 100 mm | to | 1,000 mm | | 2.5 µm | | | | |
| | | 1,000 mm | to | 1,500 mm | | 4.1 µm | | | | |
| 10* | Inside micrometers Three contact internal gauges | 2 mm | to | 100 mm | | 2.0 µm | Comparative measurement using setting rings | KP D8 | 1,2 | |
| | | 100 mm | to | 300 mm | | 4.0 µm | | | 1 | |
| | | 100 mm | to | 200 mm | | 4.0 µm | | | 2 | |
| 11 | Inside micrometer gauges | 10 mm | to | 3,000 mm | | (3L + 2.2) µm | Direct measurement by a distance meter | KP D9 | 1 | |
| | | 10 mm | to | 1000 mm | | (3L + 2.2) µm | | | 2 | |
| 12* | Electromagnetic, ultrasonic thickness gauges | 0 mm | to | 1.5 mm | | (1L + 1.3) µm | Comparative measurement by a thickness reference standard | KP D10 | 1 | |
| | | 1.5 mm | to | 500 mm | | (1L + 2.3) µm | | | | |
| 13 | Direct and lever dial indicators | 0 mm | to | 100 mm | | 0.3 µm | Direct measurement by a special measuring device | KP D11 | 1,2 | |
| | Two-contact internal gauges | 2 mm | to | 205 mm | | 0.3 µm | | | | |
| | | | 205 mm | to | 1 000 mm | | | | (3L + 2.2) µm | 2 |
| 14 | Gauges, jigs, templates, meters of plane and angle | 0 mm | to | 2,000 mm | | (4.5L + 1.7) µm | Measurement by a 3D CMM | KP D12 | 1 | |
| 15* | Profile projectors, measuring microscopes | 0 mm | to | 300 mm | | (1L + 2.6) µm | Comparative measurement using a rule | KP D13 | 1 | |
| 16* | Measurement of straightness, linear sensing, measurement of flatness of engineering gauges | 0 m | to | 20 m | | (1L + 0.1) µm | Direct measurement by a laser interferometer | KP D14 | 1 | |
| | | 0 m | to | 20 m | | 1.5 µm/m ² | | | | |

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|--------------------------|--|---------------|------|-----------|------|------------------------------------|---|-----------------------|---|------------|
| | | min. | unit | max. | unit | | | | | |
| 17 | Gauges, jigs, templates, meters | 0 mm | to | 600 mm | | (2.5L + 1.2) μm (0.8L + 0.5) μm | Measurement by a linear height gauge | KP D15 | 1 | |
| 18* | Linear height gauges | 0 mm | to | 600 mm | | (1L + 3.0) μm | Comparative measurement by a calibration comb | KP D16 | 1 | |
| | | 600 mm | to | 1,000 mm | | (1L + 2.6) μm | Comparative measurement by a calibration comb and steel parallels | | | |
| 19* | Contourographs | 0 mm | to | 100 mm | | (2L + 0.2) μm | Comparative measurement using end standards | KP D17 | 1 | |
| 20* | Length measuring instruments | 0 mm | to | 1,000 mm | | (2L + 0.2) μm | Direct measurement by a laser interferometer | KP D18 | 1 | |
| 21* | 3D coordinate measuring machines | 0 mm | to | 600 mm | | (2L + 0.2) μm | Comparative measurement by a calibration comb | KP D19 | 1 | |
| | | 600 mm | to | 1,000 mm | | (1L + 0.1) μm | Comparative measurement by a calibration comb and steel parallels | | | |
| | | 0 mm | to | 10,000 mm | | (2L + 3.5) μm | Direct measurement by a laser interferometer | | | |
| 22 | Gauges, meters, jigs, templates, rules | 0 mm | to | 330 mm | | (2L + 3.5) μm | Direct measurement by a 2D microscope | KP D20 | 1 | |
| | | 0 mm | to | 300 mm | | (5L + 2) μm | | | 2 | |
| 23 | Blade and surface rules | 0 mm | to | 2,000 mm | | (5L + 12) μm | Direct measurement on a plate | KP D21 | 1 | |
| | | 2,000 mm | to | 3,000 mm | | (5L + 12) μm | Measurement on a bed | | | |
| | | 0 mm | to | 1,000 mm | | (5L + 12) μm | Direct measurement on a plate | | 2 | |
| | | 1,000 mm | to | 1,500 mm | | (2.5L + 1.2) μm | | | | |
| 24* | Roughness meters | 0.01 μm | to | 6,000 μm | | 5 % | Comparative measurement by a roughness reference standard | KP DR1 | 1 | |
| 25 | Roughness standards | 0.01 μm | to | 6,000 μm | | 5 % | Direct measurement by a roughness meter | KP DR1 | 1 | |

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|--------------------------|--|---------------|------|-------|--------------------|------------------------------------|--|-----------------------|---|------------|
| | | min. | unit | max. | unit | | | | | |
| 26 | Angles | 0 ° | to | 180 ° | Length up to 3 m | $(4.5L + 2) \mu\text{m}$ | Direct measurement by a 3D CMM | KP R2 | 1 | |
| | | | | | Length up to 0.6 m | $(20L + 2) \mu\text{m}$ | Direct measurement on special equipment | | 2 | |

¹ Asterisk at the ordinal number identifies the calibrations, which the Laboratory is qualified to carry out outside the permanent laboratory premises.

² The expanded measurement uncertainty is in accordance with ILAC-P14 and EA-4/02 M a part of CMC and it is the lowest value of the respective uncertainty. If not stated otherwise, its coverage probability is approx. 95 %. If not stated otherwise, the uncertainty values stated without a unit are relative to the measured value. The uncertainty value stated herein is based on the best conditions achievable by the laboratory; the uncertainty value of a specific calibration may be higher depending on the conditions of such a calibration. For identical extreme values of adjacent ranges, the lower uncertainty value always applies.

³ If the document identifying the calibration procedure is dated, only these specific procedures are used. If the document identifying the calibration procedure is not dated, the latest edition of the specified procedure is used (including any changes).

Explanatory notes:

CMM – coordinate measuring machine

L – nominal length in metres

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CMC for the field of measured quantity: Plane angle

| Ord. number ¹ | Calibrated quantity / Subject of calibration | Nominal range | | Parameter(s) of the meas. quantity | Lowest expanded measurement uncertainty specified ² | Calibration principle | Calibration procedure identification ³ | Work-place |
|--------------------------|--|---------------|------------|-------------------------------------|--|---|---|------------|
| | | min. unit | max unit | | | | | |
| 1 | Levels – builder's, liquid, machine | -52 mm/m | to 52 mm/m | Division sensitivity from 0.01 mm/m | 0.005mm/m | Direct measurement by a small angle generator | KP R1 | 1,2 |
| | Clinometers | -180 ° | to 180 ° | Division from 0.01° | 0.15° | | | |
| 2 | Angle gauges | 0 ° | to 360 ° | | 5´ | Direct measurement using angle gauges | KP R2 | 1,2 |

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CMC for the field of measured quantity: Mass

| Ord. number ¹ | Calibrated quantity / Subject of calibration | Nominal range | | | | Parameter(s) of the meas. quantity | Lowest expanded measurement uncertainty specified ² | Calibration principle | Calibration procedure identification ³ | Work-place |
|--------------------------|--|---------------|------|------|---------|------------------------------------|--|--|---|------------|
| | | min. | unit | max. | unit | | | | | |
| 1* | Non-automatic weighing instruments | 0.001 g | | to | 2000 g | | 2.7·10 ⁻⁶ | Comparative measurement using a reference weight | KP VA1 | 1 |
| | | 2 kg | | to | 20 kg | | 1.4·10 ⁻⁵ | E2 class weight | | |
| | | 20 kg | | to | 1000 kg | | 5.0·10 ⁻⁵ | F2 class weight | | |
| | | | | | | | | M1 class weight | | |
| 2 | Weights and other objects | | | | | | | Comparison with a class F2 reference weight | KP VA2 | 1 |
| | | | | | 1 g | | 0.4 mg | | | |
| | | | | | 2 g | | 0.5 mg | | | |
| | | | | | 5 g | | 0.6 mg | | | |
| | | | | | 10 g | | 0.7 mg | | | |
| | | | | | 20 g | | 0.9 mg | | | |
| | | | | | 50 g | | 1.2 mg | | | |
| | | | | | 100 g | | 1.9 mg | | | |
| | | | | | 200 g | | 2.8 mg | | | |
| | | | | | 500 g | | 5.1mg | | | |
| | | | | | 1 kg | | 10 mg | | | |
| | | | | | 2 kg | | 17 mg | | | |
| | | | | | 5 kg | | 31 mg | | | |
| | | | | | 10 kg | | 60 mg | | | |
| | | | | | 20 kg | | 90 mg | | | |

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Explanatory notes: The lowest expanded measurement uncertainty is stated without accounting for the effect of the calibrated meter.

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CMC for the field of measured quantity: Rotational speed

| Ord. number ¹ | Calibrated quantity / Subject of calibration | Nominal range | | Parameter(s) of the meas. quantity | Lowest expanded measurement uncertainty specified ² | Calibration principle | Calibration procedure identification ³ | Work-place |
|--------------------------|--|----------------------|----------------------------|------------------------------------|--|--|---|------------|
| | | min. unit | max. unit | | | | | |
| 1* | Revolution meters | 30 min ⁻¹ | to 40000 min ⁻¹ | | (1.1 % + 0.5d) | Direct measurement by a revolution generator | KP OT1 | 1 |

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Explanatory notes:

d - division of the scale of the calibrated gauge

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CMC for the field of measured quantity: Hardness

| Ord. number ¹ | Calibrated quantity / Subject of calibration | Nominal range | | | | Parameter(s) of the meas. quantity | Lowest expanded measurement uncertainty specified ² | Calibration principle | Calibration procedure identification ³ | Work-place |
|--------------------------|--|---------------|-------|---------|-------------|------------------------------------|--|-----------------------|---|------------|
| | | min | unit. | max | unit. | | | | | |
| 1 | Rockwell hardness plates and samples | 70 HRA | to | 85 HRA | | 0.40 HRA | Direct measurement | KP TV1 | 1 | |
| | | 60 HRB | to | 100 HRB | | 0.40 HRB | | | | |
| | | 20 HRC | to | 70 HRC | | 0.40 HRC | | | | |
| | Shore A hardness plates | 0 ShA | to | 100 ShA | | 2.0 ShA | | | | |
| | Shore D hardness plates | 0 ShD | to | 100 ShD | | 2.0 ShD | | | | |
| | Brinell hardness plates | 8 HBW | to | 650 HBW | | 1.0 % | | | | |
| | Vickers hardness plates | 10 HV | to | 2900 HV | HV2 to HV50 | 1.0 % | | | | |
| 2* | Rockwell hardness meters for metals | 70 HRA | to | 85 HRA | | 0.50 HRA | Direct measurement using reference hardness plates | | | |
| | | 60 HRB | to | 100 HRB | | 0.50 HRB | | | | |
| | | 20 HRC | to | 70 HRC | | 0.50 HRC | | | | |
| | Vickers hardness meters for metals | 10 HV | to | 2000 HV | | 0.50 % | | | | |
| | Brinell hardness meters for metals | 10 HBW | to | 650 HBW | | 0.50 % | | | | |
| | Shore hardness meters, type A,D,E,C | 1 Sh | to | 100 Sh | | 0.50 Sh | | | | |

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CMC for the field of measured quantity: Force, mechanical tests

| Ord. number ¹ | Calibrated quantity / Subject of calibration | Nominal range | | Parameter(s) of the meas. quantity | Lowest expanded measurement uncertainty specified ² | Calibration principle | Calibration procedure identification ³ | Work-place |
|--------------------------|--|-------------------|--------------------------|------------------------------------|--|--|---|------------|
| | | min unit. | max unit. | | | | | |
| 1* | Torque wrenches | 0,1 Nm 1100 Nm | to 1100 Nm to 3000 Nm | | 0,65 % 0,90 % | Comparative measurement by a reference torque sensor | KP S1 | 1 |
| | Torque measuring devices, torque drivers, torque sensors | 0,1 Nm | až 500 Nm | | 0,40 % | | | |
| 2 | Force meters and extensometric sensors | 0 N 5 kN | to 5 kN to 30 kN | | 0,20 % 0,30 % | Comparative measurement by a reference force sensor | KP S2 | 1 |
| 3* | Force meters and extensometric sensors | 0 N 5 kN | to 5 kN to 20 kN | | 0,20 % 0,30 % | Comparative measurement by a reference force sensor | | |

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CMC for the field of measured quantity: Pressure

| Ord. number ¹ | Calibrated quantity / Subject of calibration | Nominal range | | Parameter(s) of the meas. quantity | Lowest expanded measurement uncertainty specified ² | Calibration principle | Calibration procedure identification ³ | Work-place |
|--------------------------|--|---------------|-------------|------------------------------------|--|-----------------------|---|------------|
| | | min. unit | max unit | | | | | |
| 1* | Deformation manometers, tyre pressure gauges, electromechanical pressure gauges (digital pressure gauges, pressure transducers with digital output of the measured quantity) | -100 kPa | to 0 kPa | Gas | Overpressure/ underpressure | 130 Pa | KP T1, KP T2 | 1 |
| | | 0 kPa | to 35 kPa | | | 18 Pa | | |
| | | 35 kPa | to 160 kPa | | | 130 Pa | | |
| | | 160 kPa | to 2000 kPa | | | 0.1% | | |
| | | 25 kPa | to 600 kPa | Liquids | Overpressure | 180 Pa | | |
| | | 0.6 MPa | to 6 MPa | | | 0.03 % | | |
| | | 6 MPa | to 60 MPa | | | 0.05 % | | |
| | | 60 MPa | to 70 MPa | | | 0.1 % | | |
| | | 70 MPa | to 140 MPa | | | 0.2 % | | |

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CMC for the field of measured quantity: Temperature

| Ord. number ¹ | Calibrated quantity / Subject of calibration | Nominal range | | Parameter(s) of the meas. quantity | Lowest expanded measurement uncertainty specified ² | Calibration principle | Calibration procedure identification ³ | Work-place |
|--------------------------|--|---------------|----------|------------------------------------|--|--|---|------------|
| | | min. | unit | | | | | |
| 1* | Direct-indicating thermometers | -30 °C | to | 0 °C | 0.06 °C | Comparison with a reference digital thermometer in a dry block calibrator | KP TE1 | 1 |
| | | 0 °C | to | 100 °C | 0.05 °C | Comparison with a reference digital thermometer in a liquid bath | | |
| | | 100 °C | to | 200 °C | 0.06 °C | Comparison with a reference digital thermometer in a dry block calibrator | | |
| | | 200 °C | to | 300 °C | 0.09 °C | | | |
| | | 300 °C | to | 400 °C | 0.4 °C | | | |
| | 400 °C | to | 500 °C | 0.5 °C | | | | |
| 500 °C | to | 650 °C | 0.6 °C | | | | | |
| Contactless thermometers | 650 °C | to | 1,100 °C | 1.5 °C | Comparison with a reference digital thermometer in an air oven | | | |
| 2* | Thermoelectric temperature sensors | -10 °C | to | 200 °C | 3.0 °C | Comparison with a reference pyrometer on target-type or cavity-type black body | KP TE2 | 1 |
| | | 200 °C | to | 500 °C | 6.0 °C | | | |
| | | 500 °C | to | 800 °C | 10.0 °C | | | |
| | | -30 °C | to | 0 °C | 0.7 °C | | | |
| 2* | Thermoelectric temperature sensors | 0 °C | to | 100 °C | 0.7 °C | Comparison with a reference digital thermometer in a liquid bath | KP TE2 | 1 |
| | | 100 °C | to | 550 °C | 0.9 °C | Comparison with a reference digital thermometer in a dry block calibrator | | |
| | | 550 °C | to | 800 °C | 2.3 °C | Comparison with a reference digital thermometer in an air oven | | |

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|--------------------------|--|---------------|------|--------|------|------------------------------------|--|-----------------------|---|------------|
| | | min. | unit | max. | unit | | | | | |
| 3* | Resistance temperature sensors | -30 °C | to | 0 °C | | 0.15 °C | Comparison with a reference digital thermometer in an oven | KP TE3 | 1 | |
| | | 0 °C | to | 100 °C | | 0.13 °C | Comparison with a reference digital thermometer in a liquid bath | | | |
| | | 100 °C | to | 400 °C | | 0.45 °C | Comparison with a reference digital thermometer in an oven | | | |

¹ Asterisk at the ordinal number identifies the calibrations, which the Laboratory is qualified to carry out outside the permanent laboratory premises.

² The expanded measurement uncertainty is in accordance with ILAC-P14 and EA-4/02 M a part of CMC and it is the lowest value of the respective uncertainty. If not stated otherwise, its coverage probability is approx. 95 %. If not stated otherwise, the uncertainty values stated without a unit are relative to the measured value. The uncertainty value stated herein is based on the best conditions achievable by the laboratory; the uncertainty value of a specific calibration may be higher depending on the conditions of such a calibration. For identical extreme values of adjacent ranges, the lower uncertainty value always applies.

³ If the document identifying the calibration procedure is dated, only these specific procedures are used. If the document identifying the calibration procedure is not dated, the latest edition of the specified procedure is used (including any changes).

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Krumlovská 1454/26, 664 91 Ivančice

CMC for the field of measured quantity: Electrical quantities

| Ord. number ¹ | Calibrated quantity / Subject of calibration | Nominal range | | | | Parameter(s) of the meas. quantity | Lowest expanded measurement uncertainty specified ² | Calibration principle | Calibration procedure identification ³ | Work-place |
|--------------------------|--|---------------|------|--------|------|------------------------------------|--|-----------------------|---|------------|
| | | min. | unit | max. | unit | | | | | |
| 1 | DC voltage sources | 0 mV | to | 100 mV | | 0,0062 % + 6,1 μV | Direct measurement by a standard multimeter | KP EL2 | 1 | |
| | | 0,1 V | to | 1 V | | 0,0047 % + 16 μV | | | | |
| | | 1 V | to | 10 V | | 0,0047 % + 0,14 mV | | | | |
| | | 10 V | to | 100 V | | 0,0079 % + 2,0 mV | | | | |
| | | 100 V | to | 1000 V | | 0,0079 % + 20 mV | | | | |
| 1 | DC voltage meters | 0 mV | to | 200 mV | | 0,0053 % + 7,7 μV | Direct generation with a standard calibrator | KP EL1 | | |
| | | 0,2 V | to | 2 V | | 0,0028 % + 15 μV | | | | |
| | | 2 V | to | 20 V | | 0,0028 % + 0,15 mV | | | | |
| | | 20 V | to | 200 V | | 0,0028 % + 1,5 mV | | | | |
| | | 200 V | to | 1000 V | | 0,0035 % + 17 mV | | | | |
| 2 | Direct current sources | 0 μA | to | 10 μA | | 0,050 % + 6,1 nA | Direct measurement by a standard multimeter | KP EL2 | 1 | |
| | | 10 μA | to | 100 μA | | 0,074 % + 17 nA | | | | |
| | | 0,1 mA | to | 1 mA | | 0,075 % + 0,16 μA | | | | |
| | | 1 mA | to | 10 mA | | 0,034 % + 1,2 μA | | | | |
| | | 10 mA | to | 100 mA | | 0,034 % + 12 μA | | | | |
| | | 100 mA | to | 1 A | | 0,068 % + 0,15 mA | | | | |
| | | 1 A | to | 3 A | | 0,061 % + 1,1 mA | | | | |
| 2 | Direct current meters | 0 μA | to | 200 μA | | 0,020 % + 73 nA | Direct generation with a standard calibrator | KP EL1 | | |
| | | 0,2 mA | to | 2 mA | | 0,016 % + 0,13 μA | | | | |
| | | 2 mA | to | 20 mA | | 0,009 % + 0,94 μA | | | | |
| | | 20 mA | to | 200 mA | | 0,012 % + 9,7 μA | | | | |
| | | 0,2 A | to | 2 A | | 0,018 % + 0,13 mA | | | | |

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CAB number 2301, Calibration Laboratory
Krumlovská 1454/26, 664 91 Ivančice

| Ord. number ¹ | Calibrated quantity / Subject of calibration | Nominal range | | | | Parameter(s) of the meas. quantity | Lowest expanded measurement uncertainty specified ² | Calibration principle | Calibration procedure identification ³ | Work-place |
|--------------------------|--|---------------|------|--------|---|---|--|-----------------------|---|------------|
| | | min. | unit | max. | unit | | | | | |
| | | 2 A | | 30 A | | 0,069 % + 2,5 mA | | | | |
| | | | | | | | | | | |
| | | 0 A | | 1500 A | | 0,42 % + 0,13 A | | | | |
| 3 | AC voltage sources | 0,1 mV | to | 100 mV | 10 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz | 0,086 % + 36 μV 0,16 % + 59 μV 0,69 % + 93 μV | Simulation using current coil | KP EL2 | 1 | |
| | | 0,1 V | to | 1 V | 10 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz | 0,076 % + 0,43 mV 0,14 % + 0,73 mV 0,71 % + 0,81 mV | | | | |
| | | 1 V | to | 10 V | 10 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz | 0,076 % + 4,4 mV 0,14 % + 7,3 mV 0,71 % + 17 mV | | | | |
| | | 10 V | to | 100 V | 10 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz | 0,076 % + 44 mV 0,14 % + 73 mV 0,71 % + 81 mV | | | | |
| | | 100 V | to | 750 V | 10 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz | 0,07 % + 0,35 V 0,14 % + 0,59 V 0,61 % + 1,5 V | | | | |
| | AC voltage meters | 0,1 mV | to | 200 mV | 10 Hz to 45 Hz 45 Hz to 10 kHz 10 kHz to 20 kHz 20 kHz to 50 kHz | 0,16 % + 64 μV 0,049 % + 69 μV 0,12 % + 86 μV 0,20 % + 98 μV | Direct generation with a standard calibrator | KP EL1 | | |
| | | 0,2 V | to | 2 V | 10 Hz to 45 Hz 45 Hz to 10 kHz 10 kHz to 20 kHz | 0,082 % + 0,38 mV 0,042 % + 0,29 mV 0,12 % + 0,46 mV | | | | |

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CAB number 2301, Calibration Laboratory
Krumlovská 1454/26, 664 91 Ivančice

| Ord. number ¹ | Calibrated quantity / Subject of calibration | Nominal range | | | | Parameter(s) of the meas. quantity | Lowest expanded measurement uncertainty specified ² | Calibration principle | Calibration procedure identification ³ | Workplace |
|--------------------------|--|---------------|------|--------|---|---|--|-----------------------|---|-----------|
| | | min. | unit | max. | unit | | | | | |
| | | 2 V | to | 20 V | 20 kHz to 50 kHz 10 Hz to 45 Hz 45 Hz to 10 kHz 10 kHz to 20 kHz | 0,17 % + 0,73 mV 0,084 % + 3,8 mV 0,042 % + 2,7 mV 0,12 % + 4,7 mV | | | | |
| | | 20 V | to | 200 V | 20 kHz to 50 kHz 30 Hz to 45 Hz 45 Hz to 10 kHz 10 kHz to 20 kHz | 0,17 % + 5,6 mV 0,082 % + 31 mV 0,10 % + 43 mV 0,14 % + 56 mV | | | | |
| | | 200 V | to | 1000 V | 20 kHz to 40 kHz 30 Hz to 45 Hz 45 Hz to 1 kHz 1 kHz to 5 kHz 5 kHz to 10 kHz | 0,17 % + 61 mV 0,082 % + 0,45 V 0,09 % + 0,28 V 0,14 % + 0,38 V 0,16 % + 0,49 V | | | | |
| 4 | Alternating current sources | 0,1 µA | to | 100 µA | 10 Hz to 1 kHz | 0,15 % + 7,3 nA | Direct measurement by a standard multimeter | KP EL2 | 1 | |
| | | 0,1 mA | to | 1 mA | 10 Hz to 5 kHz | 0,10 % + 0,51 µA | | | | |
| | | 1 mA | to | 10 mA | 10 Hz to 5 kHz | 0,093 % + 5,1 µA | | | | |
| | | 10 mA | to | 100 mA | 10 Hz to 5 kHz | 0,093 % + 51 µA | | | | |
| | | 0,1 A | to | 1 A | 10 Hz to 5 kHz | 0,095 % + 0,51 mA | | | | |
| | | 1 A | to | 3 A | 10 Hz to 5 kHz | 0,11 % + 3,4 mA | | | | |
| | Alternating current meters | 20 µA | to | 200 µA | 10 Hz to 45 Hz 45 Hz to 1 kHz 1 kHz to 10 kHz | 0,12 % + 71 nA 0,02 % + 40 nA 0,17 % + 0,10 µA | Direct generation with a standard calibrator | KP EL1 | | |
| | | 0,2 mA | to | 2 mA | 10 kHz to 30 kHz 10 Hz to 45 Hz 45 Hz to 1 kHz | 0,35 % + 0,18 µA 0,13 % + 0,15 µA 0,019 % + 90 nA | | | | |

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| Ord. number ¹ | Calibrated quantity / Subject of calibration | Nominal range | | | | Parameter(s) of the meas. quantity | Lowest expanded measurement uncertainty specified ² | Calibration principle | Calibration procedure identification ³ | Work-place |
|--------------------------|--|---------------|------|-------------------------------|--|--|--|-----------------------|---|------------|
| | | min. | unit | max. | unit | | | | | |
| | | 2 mA | to | 20 mA | 1 kHz to 10 kHz 10 kHz to 30 kHz 10 Hz to 45 Hz 45 Hz to 1 kHz | 0,087 % + 0,33 μA 0,20 % + 0,57 μA 0,057 % + 1,6 μA 0,048 % + 0,82 μA | | | | |
| | | 20 mA | to | 200 mA | 1 kHz to 10 kHz 10 kHz to 30 kHz 10 Hz to 45 Hz 45 Hz to 1 kHz | 0,064 % + 1,8 μA 0,11 % + 3,5 μA 0,13 % + 16 μA 0,019 % + 8,0 μA | | | | |
| | | 0,2 A | to | 2 A | 1 kHz to 10 kHz 10 kHz to 30 kHz 10 Hz to 45 Hz 45 Hz to 1 kHz | 0,087 % + 35 μA 0,14 % + 39 μA 0,13 % + 0,16 mA 0,024 % + 82 μA | | | | |
| | | 2 A | to | 30 A | 1 kHz to 5 kHz 5 kHz to 10 kHz 10 kHz to 30 kHz 30 Hz to 45 Hz 45 Hz to 100 Hz 100 Hz to 1 kHz 1 kHz to 5 kHz 5 kHz to 10 kHz | 0,088 % + 0,35 mA 0,26 % + 2,1 mA 0,50 % + 3,0 mA 0,053 % + 1,6 mA 0,042 % + 0,89 mA 0,10 % + 3,0 mA 0,12 % + 3,5 mA 0,64 % + 15 mA | | | | |
| | | 0 A | to | 1500 A | 30 Hz to 60 Hz | 0,42 % + 0,13 A | Simulation using current coil | | | |
| 5 | DC resistance / DC resistance meters | | | 0,1 Ω 1 Ω 10 Ω 100 Ω | | 8,7 mΩ 8,9 mΩ 11 mΩ 20 mΩ | Direct generation with a standard calibrator | KP EL 1 | 1 | |

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CAB number 2301, Calibration Laboratory
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| Ord. number ¹ | Calibrated quantity / Subject of calibration | Nominal range | | | | Parameter(s) of the meas. quantity | Lowest expanded measurement uncertainty specified ² | Calibration principle | Calibration procedure identification ³ | Workplace |
|--------------------------|--|---------------|------|--------|------|------------------------------------|--|-----------------------|---|-----------|
| | | min. | unit | max. | unit | | | | | |
| | | | | 1 kΩ | | 0,16 Ω | | | | |
| | | | | 10 kΩ | | 1,6 Ω | | | | |
| | | | | 100 kΩ | | 15 Ω | | | | |
| | | | | 1 MΩ | | 0,29 kΩ | | | | |
| | | | | 10 MΩ | | 8,0 kΩ | | | | |
| | | | | 100 MΩ | | 0,98 MΩ | | | | |
| | | | | 1 GΩ | | 22 MΩ | | | | |
| | | 0 Ω | to | 100 Ω | | 0,018 % + 88 m Ω | | | | |
| | | 100 Ω | to | 330 Ω | | 0,012 % + 0,11 Ω | | | | |
| | | 330 Ω | to | 1 kΩ | | 0,01 % + 0,19 Ω | | | | |
| | | 1 kΩ | to | 3,3 kΩ | | 0,012 % + 0,29 Ω | | | | |
| | | 3,3 kΩ | to | 10 kΩ | | 0,0082 % + 1,4 Ω | | | | |
| | | 10 kΩ | to | 33 kΩ | | 0,012 % + 2,2 Ω | | | | |
| | | 33 kΩ | to | 100 kΩ | | 0,0066 % + 18 Ω | | | | |
| | | 100 kΩ | to | 330 kΩ | | 0,011 % + 24 Ω | | | | |
| | | 330 kΩ | to | 1 MΩ | | 0,0066 % + 0,18 kΩ | | | | |
| | | 1 MΩ | to | 3,3 MΩ | | 0,013 % + 0,24 kΩ | | | | |
| | | 3,3 MΩ | to | 10 MΩ | | 0,0075 % + 1,8 kΩ | | | | |
| | | 10 MΩ | to | 33 MΩ | | 0,052 % + 6,4 kΩ | | | | |
| | | 33 MΩ | to | 100 MΩ | | 0,064 % + 0,21 MΩ | | | | |
| | | 100 MΩ | to | 330 MΩ | | 1,3 % + 1,9 MΩ | | | | |
| | | 330 MΩ | to | 1 GΩ | | 2,4 % + 13 MΩ | | | | |

¹ Asterisk at the ordinal number identifies the calibrations, which the Laboratory is qualified to carry out outside the permanent laboratory premises.

² The expanded measurement uncertainty is in accordance with ILAC-P14 and EA-4/02 M a part of CMC and it is the lowest value of the respective uncertainty. If not stated otherwise, its coverage probability is approx. 95 %. If not stated otherwise, the uncertainty values stated without a unit are relative to the measured value. The uncertainty value stated herein is based on the best conditions achievable by the laboratory; the uncertainty value of a specific calibration may be higher depending on the conditions of such a calibration. For identical extreme values of adjacent ranges, the lower uncertainty value always applies.

³ If the document identifying the calibration procedure is dated, only these specific procedures are used. If the document identifying the calibration procedure is not dated, the latest edition of the specified procedure is used (including any changes).

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CMC for the field of measured quantity: Time quantities

| Ord. number ¹ | Calibrated quantity / Subject of calibration | Nominal range | | Parameter(s) of the meas. quantity | Lowest expanded measurement uncertainty specified ² | Calibration principle | Calibration procedure identification ³ | Work-place |
|--------------------------|--|---------------|------------|------------------------------------|--|---|---|------------|
| | | min. unit | max. unit | | | | | |
| 1 | Time interval / time meters, stopwatches, timers | 1 s | to 86400 s | | 0,5 s | Comparison with a reference digital stopwatch | KP Č1 | 1 |

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CMC for the field of measured quantity: Humidity

| Ord. number ¹ | Calibrated quantity / Subject of calibration | Nominal range | | | | Parameter(s) of the meas. quantity | Lowest expanded measurement uncertainty specified ² | Calibration principle | Calibration procedure identification ³ | Work-place |
|--------------------------|---|---------------|------|------|---------|------------------------------------|--|---|---|------------|
| | | min. | unit | max. | unit | | | | | |
| 1* | Relative humidity meters except psychrometers | 10 % RH | | to | 95 % RH | (20 to 40) °C | 2.3% RH | Comparative measurement by a reference hygrometer | KP VL1 | 1 |

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² The expanded measurement uncertainty is in accordance with ILAC-P14 and EA-4/02 M, part of CMC, and it is the lowest value of the respective uncertainty. If not stated otherwise, its coverage probability is approx. 95 %. If not stated otherwise, the uncertainty values stated without a unit are relative to the value measured. If the calibration is carried out outside the laboratory premises, the measurement uncertainty may be affected.

³ If the document identifying the calibration procedure is dated, only these specific procedures are used. If the document identifying the calibration procedure is not dated, the latest edition of the specified procedure is used (including any changes).