



**Price List 2009 Calibration Service – Laser vibrometer –
Calibration of Laservibrometer and optical sensors
In the DKD-Laboratory DKD-K-27801 as primary calibration**

| Type | Extent of Calibration | EUR |
|---|--|------------|
| 1. Laservibrometer with analogue output, primary calibration of the transfer coefficient in one measuring range for one signal outputs velocity (V), displacement (D) or acceleration (A) with sine excitation preferably in octave steps (at 11 fixed frequency) in the standard -frequency range: 0,2 Hz to 160 Hz, 5 Hz to 5 kHz, 10 Hz to 10 kHz or 10 Hz to 20 kHz. or in the customer specified frequency range between 0,2 Hz and 20 kHz (see option-EF) | | |
| La-1-11-S-D | calibration, DKD-calibration certificate | 420 |
| options (with additional costs) | | |
| -(n) | additional measuring range for one signal output | 70 |
| -EF | Calibration with exceeding the standard frequency range | 56 |
| -31 | calibration at 31 fixed frequencies preferably in third-octave steps | 42 |
| -x | calibration at each additional working point | 15 |
| -PH | recording of the phase shift angle | 32 |
| 2. Laservibrometer, with digital output or with integrated display, primary calibration of the displayed deviation in one measuring range for one measurement range velocity (V), displacement (D) or acceleration (A) with sine excitation preferably in octave steps (at 11 fixed frequency) in the standard frequency range: 0,2 Hz to 160 Hz, 5 Hz to 5 kHz, 10 Hz to 10 kHz or 10 Hz to 20 kHz. or in the customer specified frequency range between 0,2 Hz to 20 kHz (see option-EF) | | |
| Ld-1-11-S-D | calibration, DKD-calibration certificate | 590 |
| options (with additional costs) | | |
| -(n) | additional measuring range | 120 |
| -EF | Calibration with exceeding the standard frequency range | 56 |
| -31 | calibration at 31 fixed frequencies preferably in third-octave steps | 140 |
| -x | calibration at each additional working point | 20 |

Calibration of optical sensors on request.

| Ld (a) | -1 (n) | -11(31) | -S (EF) | -D |
|------------------------------------|------------------------------------|--|---|-----------------|
| Laservibrometer digital (analogue) | Quantity of the measurement ranges | Quantity of the frequency working points | S: standard frequency range EF: exceeding the standard frequency range | DKD-calibration |

measurement value of the signal output up to the Decoder:

V velocity
A acceleration
D displacement

recommended calibration:

for analogue-Laservibrometer with 3 measurement ranges: **La-3-11-S-D** net price: 560 EUR
for digital-Laservibrometer with 3 measurement ranges: **Ld-3-11-S-D** net price: 830 EUR

Measuring uncertainties acc. to GUM for the quantity to be measured „acceleration“ on the reference point with sine excitation:

DKD-calibration: from 0,25 % for digital– and from 0,5 % for analogue-Laservibrometer

Calibration time: about. 5 working days after we receive the order and the devices to test. Shorter calibration times after agreement.

Prices: Net prices plus tax. For each shipment (up to 20 kg volume weight), a shipping and handling lump sum of 19 EUR (Germany) (incl. standard insurance of 2.500 EUR) will be added. For higher weights / insurance costs or other countries we add the real costs. For single orders of 5 or more Sensors of the same type we will give a discount of 5 % on the net price. For annually 20 or more calibrations, special contracts can be agreed. For devices not able for calibration we count our costs, but at least 50 EUR plus shipping.

Remark: Please send all sensors and/or measuring devices including parts like connecting cables, adaptors and documentation to SPEKTRA. For the making of requested adaptors or for additional costs to make the device able for calibration we keep the right to increase the price after arrangement with you.

Further calibration services at SPEKTRA:

- Calibration of sensors, measurement systems and calibrators used in vibration measurements
- Calibration of acoustic measurement technique (sound level meters, calibrators, piston phones, microphones)
- Recalibration of calibration systems
- Calibration of vibration control systems by SPEKTRA or at customer side
- Calibration of static slope sensors
- Calibration of preloaded force sensors