



Price List 2009 Calibration Service – Acoustics –
Calibration of sound level meters, signal conditioners, measuring chains and systems,
measuring microphones and calibrators, used in acoustic measurements
 by Calibration Laboratory DKD-K-27801

Type	Extent of Calibration	EUR
1. Sound level meters / Sound level measuring chains		
1.1 Periodic tests of sound level meters according to IEC 61672-3 Extensive electrical calibration of the measurement categories (dependent on the configuration of test specimen): self-generated noise, frequency weighting, level linearity, tone burst response, peak C sound level and overload indication including a calibration of the amplitude frequency response of the frequency weightings (A, B, C, LIN, Z, FLAT) in the acoustic free field at 23 fixed frequencies in one third octave steps (sound pressure levels approx. 84 dB) in a frequency range ¹ of 125 Hz to 20 kHz - or within a customer certain subset of these frequencies		
SPM-E/P-1-FF-D	Calibration, DKD calibration certificate	1,150
SPM-E/P-1-FF-W	Calibration, factory calibration certificate	980
1.2 Free field calibration of sound level meters according to IEC 61672-3 Acoustic calibration of the frequency response in free field at 23 fixed frequencies in one third octave steps (sound pressure level approx. 94 dB) in a frequency range ¹ of 125 Hz to 20 kHz with up to 3 frequency weightings (A, C and LIN), including pressure chamber calibration at the reference point (1000 Hz / 94 dB) (MK-1-1-X)		
MK-P-1-FF-D	Calibration, DKD calibration certificate	327
MK-P-1-FF-W	Calibration, factory calibration certificate	278
1.3 Pressure-chamber calibration of sound level meters according to IEC 61672-3 at the reference points: 250 Hz / 124 dB; 1,000Hz / 94 dB or 1,000 Hz / 114 dB or calibration of the amplitude frequency response of one frequency weighting in one third octave steps in a frequency range ¹ of 31.5 Hz to 2 kHz at 19 fixed frequencies (sound pressure levels approx. 84 dB), only for sound level meter with 1", ½" or ¼" microphones		
MK-P-1-1-D	Calibration at one reference point, DKD calibration certificate	95
MK-P-1-1-W	Calibration at one reference point, factory calibration certificate	81
MK-P-1-2-D	Calibration at two reference points, DKD calibration certificate	114
MK-P-1-2-W	Calibration at two reference points, factory calibration certificate	97
MK-P-1-F-D	Calibration with recording of the frequency response, DKD calibration certificate only for ½" and ¼" microphones	159
MK-P-1-F-W	Calibration with recording of the frequency response, factory calibration certificate only for ½" and ¼" microphones	135
1.4 Electrical calibration of sound level meters according to IEC 61672-3 Review of the electrical amplitude frequency response in the frequency range ¹ of 31.5 Hz to 20 kHz at 9 fixed frequencies in octave steps for the weightings A, B, C, LIN (Z or FLAT) (different frequencies in the vote possible), or verification of the electrical level linearity at 1000 Hz for a weighting filter and in one measurement range		
MK-E-1-FB-D	Calibration of the frequency weighting for one weighting filter, DKD calibration certificate	115
MK-E-1-FB-W	Calibration of the frequency weighting for one weighting filter, factory calibration certificate	98
MK-E-x-FB-D(W)	Each additional weighting filter	34
MK-E-1-PL-D	Calibration of the level linearity for one weighting filter, DKD calibration certificate	115
MK-E-1-PL-W	Calibration of the level linearity for one weighting filter, factory calibration certificate	98
MK-E-x-PL-D(W)	Each additional weighting filter	34
1.5 Electrical Calibration of octave band filter, third octave band filter and band-pass filter Calibration in standard frequency range 31,5 Hz to 16 kHz , or calibration in freely selectable frequency range 10 Hz to 20 kHz observables: center frequency and cut-off frequency		
OF-E-1-D	Octave band filter, calibration of up to 11 center frequencies, DKD calibration certificate	163
OF-E-1-W	Octave band filter, calibration of up to 11 center frequencies, factory calibration certificate	138
TF-E-1-D	One third octave band filter, calibration of up to 28 center frequencies, DKD calibration certificate	186
TF-E-1-W	One third octave band filter, calibration of up to 28 center frequencies, factory calibration certificate	158
BP-E-1-D	Band-pass filter, calibration of up to 11 center frequencies, DKD calibration certificate	163
BP-E-1-W	Band-pass filter, calibration of up to 11 center frequencies, factory calibration certificate	138
OF(TF/BP)-E-x-D (W)	Each additional center frequency	86

¹ Calibrations below or above these frequency ranges on request

Type	Extent of Calibration	EUR
2. Measuring microphones, with and without preamplifier		
2.1 Free field calibration for measuring microphones with any diameter Acoustic calibration of amplitude frequency response in free field at 23 fixed frequencies in one third octave steps (sound pressure levels approx. 84 dB) in the standard frequency range¹ of 125 Hz to 20 kHz		
M-P-1-FF-D	Calibration, DKD calibration certificate	224
M-P-1-FF-W	Calibration, factory calibration certificate	198
M-P-1-x-FF-D(W)	Each additional working point	15
2.2 Pressure-chamber calibration for microphones with 1"; ½" and ¼" microphone diameters at one or more reference points: 250 Hz / 124 dB, 1,000 Hz / 94 dB or 1,000 Hz / 114 dB or with recording of the amplitude frequency response at 19 fixed frequencies in a frequency range ¹ of 31.5 Hz to 2 kHz at sound pressure levels of 84 dB to 114 dB, preferably in one third octave steps		
M-P-1-1-D	Calibration at one reference point, DKD calibration certificate	95
M-P-1-1-W	Calibration at one reference point, factory calibration certificate	81
M-P-1-2-D	Calibration at two reference points, DKD calibration certificate	114
M-P-1-2-W	Calibration at two reference points, factory calibration certificate	97
M-P-1-F-D	Calibration with recording of the frequency response, DKD calibration certificate	159
M-P-1-F-w	Calibration with recording of the frequency response, factory calibration certificate	135
M-P-1-X-D(W)	Each additional working point	15
2.3 Pressure-chamber - very low frequency - calibration: For pressure sensors, pressure measurement systems, measuring microphones und microphone measuring systems in the frequency range from 0,1 Hz up to 31,5 Hz , in the pressure range from 10Pa up to 32 Pa , (114dB up to 124 dB re 20 µPa)		
M-P-VLF-1-26-W	Calibration in the very low frequency range, factory calibration certificate	248
3. Sound calibrators, pistonphones and multifunction calibrators: Measurement categories: sound pressure level, frequency and harmonic distortion		
K-P-1-D	Calibration at one working point, DKD calibration certificate	111
K-P-1-W	Calibration at one working point, factory calibration certificate	95
K-P-2-D	Calibration at two working points, DKD calibration certificate	126
K-P-2-W	Calibration at two working points, factory calibration certificate	108
K-P-x-D(W)	Each additional working point	15
4. Signal conditioners in the acoustics Electrical calibration of the frequency response for signal conditioners, microphone supplies or multichannel sound level measuring chains in the standard frequency range from 31,5 Hz to 20 kHz or in a freely selectable frequency range from 1 Hz to 50 kHz. Electrical calibration of level linearity per channel into one measuring range at one frequency (31,5 Hz, 1000 Hz, 8000 Hz). Measurement of the provided polarization voltage of microphone supplies and sound level measuring chains (if used).		
SKM-E-1-20-D	1 channel, Calibration, DKD calibration certificate	158
SKM-E-1-20-W	1 channel, Calibration, factory calibration certificate	134
SKM-E-2-20-D	2 channels, Calibration, DKD calibration certificate	244
SKM-E-2-20-W	2 channels, Calibration, factory calibration certificate	208
SKM-E-4-20-D	4 channels, Calibration, DKD calibration certificate	392
SKM-E-4-20-W	4 channels, Calibration, factory calibration certificate	333
SKM-E-n-20-D	From 5 channels, Calibration of each additional channels (from 5 th channel), DKD calibration certificate	57
SKM-E-n-20-W	From 5 channels, Calibration of each additional channels (from 5 th channel), factory calibration certificate	48
5. Option for all calibrations in the acoustics		
- conformity	Declaration of conformity: checking the conformance of the determined characteristic data of the certificate with manufacturer-provided information	15

¹ Calibrations below or above these frequency ranges on request

Exemplification of the type key:

M	-P	-1	-FF	-D
Microphone	Sound Pressure	1 channel	Free Field	DKD certificate



Calibration time: About 5 working days after we receive the order and the devices to test. Better 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 (only 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
- Recalibration of calibration systems
- Calibration of vibration control systems at SPEKTRA or at customer side
- Calibration of laser vibrometers and optical vibration sensors
- Calibration of static slope sensors
- Calibration of preloaded force sensors