

VTT MIKES calibration and expert services

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Prices in this price list do not include VAT.

For information about addresses, delivery conditions and other conditions see the end of the price list.

Service	Service number	Basic fee EUR	Service number	Additional/hourly fee EUR	
Weights					
1 mg - 500 mg					
OIML class F1			1111	80.00	x number of pieces
OIML class E2			1121	113.00	x number of pieces
OIML class E1			1131	167.00	x number of pieces
OIML class M1			1141	64.00	x number of pieces
1 g - 5 kg					
OIML class F1			1151	67.00	x number of pieces
OIML class E2			1161	94.00	x number of pieces
OIML class E1			1171	137.00	x number of pieces
OIML class M1			1181	55.00	x number of pieces
10 kg - 20 kg					
OIML class F1			1211	99.00	x number of pieces
OIML class E2			1221	150.00	x number of pieces
OIML class E1			1231	226.00	x number of pieces
OIML class M1			1241	76.00	x number of pieces
Weight used in pressure balances (ring weights)					
Accuracy class 10 ppm			1411	55.00	x number of pieces
Accuracy class 5 ppm			1421	74.00	x number of pieces
Weights, basic charge	1480	227.00			
Density of weights					
Density of weights, 1 g - 2 kg	1510	266.00	1511	86.00	x number of pieces
Density standards, basic charge	1550	266.00	1551	186.00	x working hours (h)
Hydrometers, 4 meas. points	1600	486.00			
Density of water sample at a single temperature	1620	587.00	1621	228.00	x number of extra temperature points
Gas flow					
Calibration using nitrogen, 5 ml/min ... 100 l/min					
Using primary method: 5 meas. points	1660	1 432.00	1661	201.00	x number of extra measurement points
Using an LFE-system: 5 meas. points	1680	1 102.00	1681	137.00	x number of extra measurement points
Pressure					
Calibration of oil-filled pressure balance, 0.5 MPa ... 500 MPa	4312	1 900.00			
Calibration of gas-filled pressure balance, 1 MPa ... 16 MPa	4314	1 700.00			
Barometer calibrations, 950–1050 hPa (6 measurement points)					
Uncertainty > 6 Pa	4400	497.00	4401	83.00	x number of extra measurement points
Uncertainty < 6 Pa	4410	675.00	4411	114.00	x number of extra measurement points
Pressure gauge calibration					
(price per measuring range includes 6 measurement points)	4440	727.00	4441	122.00	x number of extra measurement points
Negative gauge pressure calibration					
(price per measuring range includes 6 measurement points)	4460	872.00	4461	146.00	x number of extra measurement points
Vacuum gauge calibrations					
(price per measuring range includes 6 measurement points)	4500	654.00	4501	67.00	x number of extra measurement points
Spinning rotor gauge calibrations	4520	1 405.00			
Leak testing using helium	4550	case-specific			
Dynamic pressure measurements, 20 MPa ... 500 MPa	4552	case-specific			
Pressure calibrations with instrument adjustment: 1.5 x normal price (adjustment needs always to be agreed for each case)					
Expert services (mass, temperature, pressure, humidity, flow, density)	1990	case-specific			
Thermometers					
Fixed point calibrations					
Resistance thermometers ITS-90, -189 ... +962 °C					
Ar (-189 °C)	2110	1 513.00			
Hg (-38 °C)	2120	706.00			
Ga (29 °C)	2130	706.00			
Sn (232 °C)	2150	706.00			
Zn (419 °C)	2160	706.00			
Al (660 °C)	2170	1 069.00			
Ag (962 °C)	2172	1 244.00			
Triple point of water	2176	1 744.00			
Thermocouples at 4 fixed points, eg. Cu, Ag, Al and Zn	2180	1 715.00	2181	1 754.00	x if the 4 points include Ag

Service	Service number	Basic fee EUR	Service number	Additional/hourly fee EUR	
Calibration by comparison					
Resistance thermometers in a liquid bath, -80 °C ... 280 °C	2210	212.00	2211	155.00	x measured point
Liquid-in-glass thermometers in a liquid bath, -80 °C ... 280 °C	2220	257.00	2221	182.00	x measured point
Digital thermometers	2230	212.00	2231	155.00	x measured point
Thermometers in oven, < 960 °C	2240	265.00	2241	188.00	x measured point
Furnaces	2260	414.00	2261	171.00	x measured point
Calibration at the boiling point of nitrogen	2310	591.00			
Calibration by electrical simulation	2350	363.00			
Hygrometers					
Dew point calibrations					
Dew-point temperature, -80 °C ... -61 °C	3100	827.00	3101	435.00	x measured point
Dew-point temperature, -60 °C ... +84 °C	3150	663.00	3151	218.00	x measured point
Humidity and temperature calibrations					
10 %rh ... 95 %rh, +10 °C ... +85 °C	3502	384.00	3503	182.00	x measured point
10 %rh ... 95 %rh, -20 °C ... +10 °C	3504	827.00	3505	333.00	measured point
Length					
Laser Radiations					
Stabilized laser of the mise en pratique					
532 nm			5111	159.00	x working hours (h)
543,5 nm			5121	159.00	x working hours (h)
633 nm	5130	917.00			
Other wavelength standards					
Fibre optic source	5140	170.00	5141	159.00	x working hours (h)
Optical spectrum analyzer	5142	170.00	5143	159.00	x working hours (h)
Linear dimensions					
Length instruments					
Laser interferometer					
Basic system	5210	170.00	5211	1 218.00	x number of pieces
Angle measurement option			5215	640.00	x number of pieces
Straightness measurement option			5219	640.00	x number of pieces
Air sensor			5223	640.00	x number of pieces
Adjustment of air sensor			5227	159.00	x working hours (h)
Wave length calibration	5230	917.00			
EDM instrument					
0 - 30 m	5234	170.00	5235	313.00	x number of pieces
1-D measuring machine					
0 - 500 mm	5238	170.00	5239	762.00	x number of pieces
501 - 1000 mm	5240	170.00	5241	953.00	x number of pieces
1001 - 3000 mm	5242	170.00	5243	1 400.00	x number of pieces
Additional scale of same machine	5244	170.00	5245	337.00	x number of pieces
Scale compensation			5247	159.00	x working hours (h)
Height measuring instrument	5248	170.00	5249	1 401.00	x number of pieces
1-D displacement					
Piezo etc.	5252	170.00	5253	194.00	x number of pieces
1-D sensor					
Measuring range < 10 mm	5256	170.00	5257	188.00	x number of pieces
Measuring range 10 mm - 25 mm	5258	170.00	5259	373.00	x number of pieces
Measuring range > 25 mm	5260	170.00	5261	453.00	
Additional range			5271	96.00	x number of pieces
Reduced uncertainty (u< 0,3 µm)			5263	1 040.00	x number of pieces
Gauge block comparator	5264	170.00	5265	953.00	x number of pieces
Dial-indicator tester	5268	170.00	5269	435.00	x number of pieces
End standards					
Gauge blocks					
0,5 - 100 mm	5272	170.00	5273	29.00	x number of pieces
> 100 ... 1000 mm	5276	170.00	5277	124.00	x number of pieces
Special gauge block	5280	170.00	5281	71.00	x number of pieces
Gauge block, interferometral calibration					
0 - 100 mm	5284	170.00	5285	96.00	x number of pieces
101 - 200 mm	5286	170.00	5287	182.00	x number of pieces
201 - 400 mm	5288	170.00	5289	298.00	x number of pieces
401 - 1000 mm	5290	170.00	5291	435.00	x number of pieces
Gauge block set M88	5320	170.00	5321	5 267.00	x number of pieces
Gauge block set M112	5322	170.00	5323	6 549.00	x number of pieces
Gauge block set M122	5324	170.00	5325	7 078.00	x number of pieces

Service	Service number	Basic fee EUR	Service number	Additional/hourly fee EUR	
Air gap standard	5294	170.00	5295	356.00	x number of pieces
Sheet gauge, thickness	5296	170.00	5297	96.00	x number of pieces
Sheet gauge, diameter	5298	170.00	5299	114.00	x number of pieces
Length bar (long gauge block)	5310	170.00	5311	546.00	x number of pieces
Micrometer setting rod					
0 - 100 mm	5314	170.00	5315	60.00	x number of pieces
101 - 500 mm	5316	170.00	5317	148.00	x number of pieces
> 500 mm	5318	170.00	5319	227.00	x number of pieces
Step gauge, normal accuracy (0.3 µm/m)					
0 - 250 mm	5030	170.00	5031	879.00	x number of pieces
251 - 350 mm	5032	170.00	5033	1 112.00	x number of pieces
351 - 500 mm	5034	170.00	5035	1 349.00	x number of pieces
501 - 700 mm	5036	170.00	5037	1 561.00	x number of pieces
701 - 1100 mm	5038	170.00	5039	1 773.00	
1101 - 1600 mm	5040	170.00	5041	2 155.00	
1601 - 2020 mm	5042	170.00	5043	2 348.00	
Step gauge, better accuracy (0.15 µm/m)					
0 - 250 mm	5044	170.00	5045	1 299.00	
251 - 350 mm	5046	170.00	5047	1 626.00	
351 - 500 mm	5048	170.00	5049	1 880.00	
501 - 700 mm	5050	170.00	5051	2 254.00	
701 - 1100 mm	5052	170.00	5053	2 552.00	
1101 - 1600 mm	5054	170.00	5055	3 084.00	
1601 - 2020 mm	5056	170.00	5057	3 355.00	
Gap gauge	5334	170.00	5335	117.00	x number of pieces
Feeler (thickness) gauge	5338	170.00	5339	33.00	x number of pieces
Line standards					
Precision line scale, stage micrometer					
Max 50 lines					
0 - 100 mm	5342	170.00	5343	337.00	x number of pieces
101-500 mm	5344	170.00	5345	469.00	x number of pieces
501 - 1000 mm	5346	170.00	5347	627.00	x number of pieces
Additional scale at same substrate					
0 - 100 mm			5349	169.00	x number of pieces
101-500 mm			5351	337.00	x number of pieces
501 - 1000 mm			5353	469.00	x number of pieces
Reduced uncertainty, u<200 nm			5177	case-specific	
2D scale	5354	170.00	5355	406.00	x number of pieces
1-D and 2-D gratings and other microscope calibration standards, see Microscope calibration standards					
Tape, wire					
0 - 30 (60, 90, ...) m	5356	170.00	5357	211.00	x number of 30 m (beginnings)
Tape measure	5362	170.00	5363	105.00	x number of pieces
Plumb tape					
0 - 30 (60, 90, ...) m	5358	170.00	5359	261.00	x number of 30 m (beginnings)
Electronic plumb tape	5372	170.00	5373	313.00	x number of pieces
Circometer	5360	170.00	5361	313.00	x number of pieces
Machinist scale					
0 - 1 m	5364	170.00	5365	313.00	x number of pieces
>1 - 2 m	5366	170.00	5367	391.00	x number of pieces
>2 - 3 m	5368	170.00	5369	469.00	x number of pieces
>3 - 5 m	5370	170.00	5371	627.00	x number of pieces
Additional scale			5377	157.00	x number of pieces
Diameter standards					
External cylinder (plug, piston)	5380	170.00	5381	139.00	x number of pieces
Reduced uncertainty, u<500 nm on diameter			5383	262.00	x number of pieces
Micrometer setting ring	5386	170.00	5387	76.00	x number of pieces
External cylinder (tapered)	5384	170.00	5385	262.00	x number of pieces
Internal cylinder (ring)	5388	170.00	5389	139.00	x number of pieces
Reduced uncertainty u<500 nm on diameter			5379	262.00	x number of pieces
Internal cylinder (tapered)	5390	170.00	5391	262.00	x number of pieces
Sphere (ball); diameter	5394	170.00	5395	283.00	x number of pieces
Roundness			5399	384.00	x number of pieces
Reduced uncertainty u<300 nm on diameter			5397	395.00	x number of pieces

Service	Service number	Basic fee EUR	Service number	Additional/ hourly fee EUR	
Angle					
Angle by Circle Dividers					
Optical polygons (12 faces)	5410	170.00	5411	755.00	x number of pieces
Index table	5414	170.00	5415	819.00	x number of pieces
Rotary table, rotary encoder scale	5418	170.00	5419	819.00	x number of pieces
Reduced uncertainty, u<0,2"			5421	1 401.00	x number of pieces
Small-angle Generators					
Sine (bar, table)	5422	170.00	5423	685.00	x number of pieces
Angle instruments					
Autocollimator	5426	170.00	5427	582.00	x number of pieces
Reduced uncertainty u<0,02"			5429	1 275.00	x number of pieces
Electronic level (frame type)	5430	170.00	5431	1 167.00	x number of pieces
Electronic level	5434	170.00	5435	377.00	x number of pieces
Clinometers	5438	170.00	5439	377.00	x number of pieces
Sprit (bubble) level	5442	170.00	5443	235.00	x number of pieces
Sprit (bubble) level (frame type)	5446	170.00	5447	934.00	x number of pieces
Theodolite (see Form/ Tachymeter/ Angular scales)					
Optical level	5454	170.00	5455	582.00	x number of pieces
(bevel) protractor	5458	170.00	5459	397.00	x number of pieces
Squareness tester	5462	170.00	5463	909.00	x number of pieces
Angle artifacts					
Angle block	5464	170.00	5465	130.00	x number of pieces
90° square					
Knife edge square	5470	170.00	5471	139.00	x number of pieces
Steel square	5474	170.00	5475	582.00	x number of pieces
Granite square	5478	170.00	5479	883.00	x number of pieces
Frame square	5480	170.00	5481	1 766.00	x number of pieces
Cylinder square	5482	170.00	5483	762.00	x number of pieces
Cone (taper) gauge	5486	170.00	5487	595.00	x number of pieces
Angle Prisms	5490	170.00	5491	397.00	x number of pieces
Optical square (pent prism)	5494	170.00	5495	397.00	x number of pieces
Retro reflector	5496	170.00	5497	130.00	x number of pieces
Form					
Shaft alignment instrument	5510	170.00	5511	1 096.00	x number of pieces
Flatness standards					
Optical flat < 150 mm	5514	170.00	5515	156.00	x number of pieces
Optical flat (parallel, wedge)	5518	170.00	5519	96.00	x number of pieces
Surface plate (granite)					
Surface plate < 1000 mm	5522	170.00	5523	794.00	x number of pieces
Surface plate > 1000 mm	5526	170.00	5527	953.00	x number of pieces
Flatness standard for SPMs	5528	170.00	5529	346.00	x number of pieces
Roundness standards					
External cylinder	5530	170.00	5531	209.00	x number of pieces
External cylinder (arbor)	5534	170.00	5535	485.00	x number of pieces
Internal cylinder	5538	170.00	5539	209.00	x number of pieces
Sphere (hemisphere)	5542	170.00	5543	370.00	x number of pieces
Magnification standard	5546	170.00	5547	235.00	x number of pieces
Straightness Standards					
Straight edge	5550	170.00	5551	260.00	x number of pieces
Cylindrical straightness standards (granite)					
0 - 1000 mm	5564	170.00	5565	733.00	x number of pieces
> 1000 mm	5568	170.00	5569	856.00	x number of pieces
(steel)					
0 - 1000 mm	5572	170.00	5573	298.00	x number of pieces
> 1000 mm	5576	170.00	5577	582.00	x number of pieces
Cylindricity Standards					
External cylinder	5580	170.00	5581	262.00	x number of pieces
Internal cylinder	5584	170.00	5585	262.00	x number of pieces
Complex Geometry					
Surface Texture Standards					
(Groove) depth (step height) standard, e.g. ISO 5436-1 Type A	5610	170.00	5611	214.00	x number of grooves
Tip-condition standard	5614	170.00	5615	159.00	x working hours (h)
Spacing standard	5618	170.00	5619	159.00	x working hours (h)
Roughness standard	5624	170.00	5625	214.00	x number of pieces
Profile coordinate standard	5626	170.00	5627	159.00	x working hours (h)

Service	Service number	Basic fee EUR	Service number	Additional/ hourly fee EUR	
Screw Standards					
Setting standard for thread micrometer	5632	170.00	5633	282.00	x number of pieces
Thread plug, plain	5636	170.00	5637	302.00	x number of pieces
Thread plug, tapered	5640	170.00	5641	396.00	x number of pieces
Thread ring, plain	5644	170.00	5645	319.00	x number of pieces
Thread ring, tapered	5648	170.00	5649	427.00	x number of pieces
2-D, 3-D Instruments					
Surface roughness measuring machine	5652	170.00	5653	461.00	x number of pieces
Additional tip			5655	247.00	x number of pieces
Measuring projector	5656	170.00	5657	953.00	x number of pieces
Measuring microscope	5660	170.00	5661	953.00	x number of pieces
Coordinate measuring machine					
length scale	5690	170.00	5691	159.00	x working hours (h)
Straightness <1000 mm	5696	170.00	5697	159.00	x working hours (h)
Coordinate measuring machine, inspection 10360-2	5698	170.00	5699	2 023.00	x number of pieces
Tachymeter					
Length scale	5704	170.00	5705	313.00	x number of pieces
Angular scales; (also theodolite)	5706	170.00	5707	1 250.00	x number of pieces
Motion (translation, angle) stage	5670	170.00	5671	240.00	x number of pieces
Roundness measuring machine	5674	170.00	5675	794.00	x number of pieces
Cylindricity measuring machine	5676	170.00	5677	953.00	x number of pieces
Form-measuring machine	5678	170.00	5679	953.00	x number of pieces
Hardness					
Hardness indenter	5688	170.00	5689	216.00	x number of pieces
Microscope calibration standards					
1-D grating, SPM calibration standard (diffraction measurement) Pitch	5150	170.00	5151	345.00	x number of pieces
2-D grating, SPM calibration standard (diffraction measurement) Pitch, x&y	5152	170.00	5153	518.00	x number of pieces
Orthogonality (to the same grating)			5155	175.00	x number of pieces
1-D grating, SPM calibration standard (AFM measurement) Pitch	5180	170.00	5181	470.00	x number of pieces
Step height by AFM			5183	175.00	x number of pieces
2-D grating, SPM calibration standard Pitch, x&y	5190	170.00	5191	629.00	x number of pieces
Orthogonality (to the same grating)			5193	175.00	x number of pieces
Step height by AFM			5195	227.00	x number of pieces
Flatness (to the same grating)			5197	175.00	x number of pieces
Step height standard for SPMs					
Step height	5612	170.00	5613	470.00	x number of pieces
Flatness standard for SPMs	5528	170.00	5529	346.00	x number of pieces
Other microscope standards, see line scales above					
Various dimensional					
Hand instruments					
External micrometer					
0 - 50 mm	5710	170.00	5711	149.00	x number of pieces
51 - 500 mm	5714	170.00	5715	182.00	x number of pieces
501 - 3000 mm	5718	170.00	5719	753.00	x number of pieces
Micrometer head	5724	170.00	5725	240.00	x number of pieces
Depth micrometer	5728	170.00	5729	156.00	x number of pieces
Depth micrometer setting device	5730	170.00	5731	907.00	x number of pieces
Caliper					
0 - 150 mm	5734	170.00	5735	149.00	x number of pieces
151 - 500 mm	5738	170.00	5739	235.00	x number of pieces
> 500 mm	5742	170.00	5743	364.00	x number of pieces
Depth gauge	5746	170.00	5747	149.00	x number of pieces
Internal two-point (bore) micrometer					
Basic equipment	5750	170.00	5751	156.00	x number of pieces
Extra part(s)	5754	170.00	5755	96.00	x number of pieces
Internal three-point micrometer	5760	170.00	5761	367.00	x number of pieces
Dial gauge, dial test indicator					
0 - 10 mm	5762	170.00	5763	105.00	x number of pieces
10 - 25 mm	5764	170.00	5765	127.00	x number of pieces
> 25 mm	5768	170.00	5769	139.00	x number of pieces

Service	Service number	Basic fee EUR	Service number	Additional/hourly fee EUR	
Diameter gauge	5766	170.00	5767	96.00	x number of pieces
Thickness gauge	5770	170.00	5771	149.00	x number of pieces
Tachometer, contact type	5772	170.00	5773	157.00	x number of pieces
Melt viscosity instrument nozzle	5774	170.00	5775	472.00	x number of pieces
Measuring services					
Surface roughness measurements	5810	170.00	5811	159.00	x working hours (h)
Flatness measurements					
interferometric	5814	170.00	5815	105.00	x number of pieces
mechanical	5818	170.00	5819	159.00	x working hours (h)
Machine tool measurements					
-Position accuracy measurements	5822	170.00	5823	240.00	x number of axes
According to VDI/GDO-3441 or to ISO 230/2					
-Positioning during adjustment	5826	170.00	5827	159.00	x working hours (h)
-Geometrical measurements	5830	170.00	5831	159.00	x working hours (h)
-Test piece measurements	5834	170.00	5835	159.00	x working hours (h)
-Angular deviations of movement	5840	170.00	5841	96.00	x number of axes
Roundness measurements	5844	170.00	5845	113.00	x number of pieces
Cylindricity measurements	5848	170.00	5849	137.00	x number of pieces
Form measurements	5852	170.00	5853	156.00	x number of pieces
Atomic force microscopic measurements	5854	170.00	5855	179.00	x working hours (h)
Electronic force microscopy measurements			5851	179.00	x working hours (h)
3-D measurements with CMM					
contact probe (Legex)	5856	170.00	5857	169.00	x machine/working hours (h)
optical probe (Quick Vision)	5858	170.00	5859	169.00	x machine/working hours (h)
XCT measurements for industrial artefacts	5864	case-specific			
Orifice plate	5862	170.00	5863	422.00	x number of pieces
Other measuring services	5860	170.00	5861	159.00	x working hours (h)
Other service					
Identification marks	5910	29.00			
Ultrasound cleaning	5920	60.00			
Burr removing	5930	29.00			
Evaluation of measuring results	5940	29.00			
Expert service	5990	case-specific			
Time and Frequency					
df/f, dT/T, uncertainty < 0.001 ppm	0720	857.00			
Rubium and cesium oscillators,					
GPS timing receivers, etc.					
df/f, dT/T, uncertainty 0.001-1 ppm	0722	685.00			
TCXO etc.					
df/f, dT/T, uncertainty over 1 ppm	0724	430.00			
Tachometers, stroboscopes,					
electronic watches, etc.					
Point frequency adjustment			0731	218.00	x measured point
NTP service	0780	case-specific			
Expert services	0590	case-specific			
Electricity					
DC voltage					
DC voltage standards, single voltage level	0500	1 117.00	0501	382.00	x additional voltage
DV current					
Basic fee includes one measuring range					
10 fA – 100 nA	0520	639.00	0521	117.00	x measuring range
100 µA – 1 A	0522	368.00	0523	49.00	x measuring range
see also multimeters and calibrators					
1 A – 20 A	0524	430.00	0525	87.00	x measuring range
20 A – 600 A	0526	615.00	0527	112.00	x measuring range

Service	Service number	Basic fee EUR	Service number	Additional/hourly fee EUR	
Resistance					
DC calibrations					
10 mohm - 1 Mohm (< 150 mA, < 100 mW, <100 V)	0530	727.00			
0,1 mohm - 1 ohm (150 mA - 100 A, < 100 W)	0570	966.00			
1 Mohm - 100 Mohm (< 100 V)	0540	807.00			
1 Mohm - 100 Tohm (< 1 kV, < 10 mW)	0550	897.00			
Power dependence of resistance standards			0551	117.00	x additional voltage / current
Temperature dependence of resistance standards 20...25 °C			0561	173.00	x additional temperature
AC voltage					
Thermal converters, 45-60 Hz					
Uncertainty < 400 ppm					
Current transformers 0,1 A - 2500 A	0616	854.00	0617	78.00	x additional range/burden (with 5 measure
Current transformers over 2500 A	0618	1 199.00	0619	78.00	x additional range/burden (with 5 measure
Current transformers, uncertainty under 400 ppm	0602	case-specific			
High voltage					
DC voltage					
DC voltage measuring system					
1 kV - 50 kV	0410	756.00			
50 kV - 200 kV	0412	1 137.00			
200 kV - 1200 kV	0414	case-specific			outside official CMC range
DC linearity test	0416	case-specific			in connection with system calibration
AC voltage					
AC voltage measuring system					
1 kV - 40 kV	0420	756.00			
40 kV - 100 kV	0422	950.00			
100 kV - 200 kV	0424	1 326.00			
200 kV - 500 kV	0426	case-specific			outside official CMC range
AC linearity test	0428	382.00			in connection with system calibration
High voltage probe (ac or dc / ac and dc)					
ac or dc	0430	756.00			
ac and dc	0432	950.00			
Voltage transformer					
1 kV - 40 kV	0434	756.00			
40 kV - 100 kV	0436	950.00			
100 kV - 200 kV	0438	1 234.00			
Capacitance and inductance					
Capacitance					
High voltage capacitance and tand	0440	745.00			
Inductance					
Inductance and losses	0442	745.00			
Calibration of capacitance bridge	0444	case-specific			
High voltage on-site calibrations	0448	case-specific			
Pulse calibrations					
LI measuring system					
1 kV - 10 kV	0450	756.00			
10 kV - 200 kV	0452	case-specific			
200 kV - 400 kV	0454	case-specific			
Step response measurement	0456	382.00			in connection with system calibration
Linearity test	0458	382.00			in connection with system calibration
SI measuring system					
1 kV - 200 kV	0460	case-specific			
Step response measurement	0462	382.00			
Linearity test	0464	382.00			in connection with system calibration
Impulse calibration					
Digital recorder	0470	569.00	0471	26.00	x measured point
Impulse calibrator	0474	1 029.00	0475	55.00	x measured point
Step response measurement	0472	94.00	0473	19.00	x measured point
PD-calibrator, 5 measurement points	0480	756.00	0481	25.00	x additional point
Surge-tester calibration	0482	1 612.00			
Impulse current	0484	756.00			
ESD-tester calibration	0486	case-specific			
On-site pulse calibrations	0498	case-specific			

Service	Service number	Basic fee EUR	Service number	Additional/hourly fee EUR	
Calibrators					
Examples of calibrated devices: Fluke 5700 A, Fluke 5500 A					
Basic calibration at about 80 measurement points	0620	3 193.00	0621	1 066.00	oscilloscope calibrators, e.g. SC300, SC
Calibration at specific points	0630	833.00	0631	57.00	x measured point
Calibrator, basic calibration	0636	2 218.00			
Tester calibrators					
Examples of calibrated devices: Fluke 5320A, 5322A	0638	4 238.00			
Multimeters					
Fees include basic functions (DCV, ACV, DCI, ACI,R)					
Additional functions (temperature, capacitance, etc.) according to a separate offer					
Reference multimeters, e.g. Keysight 3458 A, Fluke 8508A					
basic calibration at about 80 measurement points	0640	1 470.00			
Mid-level devices, e.g. Keysight 34450A	0652	859.00			
Basic devices, e.g. Fluke 79	0654	430.00			
Insulation resistance meters					
up to 100 GOhm	0656	618.00			
up to 100 TOhm	0658	842.00			
Oscilloscopes					
Single channel	0662	954.00	0663	159.00	x additional channel
Laboratory power sources					
Single output	0664	534.00	0665	159.00	x additional output
Electronic loads					
Single channel	0666	792.00	0667	159.00	x additional channel
Amplifiers					
Transconductance amplifiers					
Examples of calibrated devices: Datron 4600, Fluke 5220 A					
Basic calibration at about 30 measurement points	0660	1 726.00			
Calibration at specific points	0670	833.00	0671	175.00	x measured point
Voltage amplifiers					
Examples of calibrated devices: Fluke 5205 A					
Basic calibration at about 20 measurement points	0680	1 264.00			
Calibration at specific points	0690	727.00	0691	145.00	x measured point
Electric power					
Basic fees include ca. 20 measurement points					
Electric power, 1-phase unc. 0,005%-0,05%	0700	1 818.00			
Electric power, 1-phase unc. 0,05%-0,5%	0710	994.00			
Electric power, 1-phase unc. over 0,5%	0712	663.00			
Electric power, 3-phase unc. 0,01%-0,05%	0714	case-specific			
Electric power, 3-phase unc. 0,05%-0,5%	0716	994.00			
Electric power, 3-phase unc. over 0,5%	0718	663.00			
Electric power, additional measuring points			0719	159.00	x working hours (h)
Capacitance standards					
Basic calibration	0740	745.00			
Inductance standards					
Basic calibration	0770	745.00			
High frequencies					
Cal. factor of RF & MW power sensor					
10 MHz - 18 GHz,	0750	1 635.00	0751	20.00	x additional point
1 mW, 25 points, reflection coefficients					
Reference supply of a power sensor	0754	545.00			
Attenuation	0756	1 090.00	0757	20.00	x additional point
10 MHz - 6 GHz, 0 - 80 dB,					
6 GHz - 18 GHz, 0 - 60 dB,					
40 points, reflection coefficients					
Other services in electricity					
Adjustment of measuring devices	0760	328.00	0761	159.00	x working hours (h)
Expert services	0790	case-specific			
Measurement services, working time (h)			0795	159.00	x working hours (h)

Service	Service number	Basic fee EUR	Service number	Additional/hourly fee EUR	
Acoustics					
Sound calibrators: single frequency calibrators	0800	308.00	0801	145.00	x additional point
Sound calibrators, e.g. B&K 4226	0810	1 423.00	0811	145.00	x additional point
Microphones LS1P or LS2P					
Reciprocity calibration, 31,5 Hz - 10 (20) kHz, including 26 frequencies or more	0820	2 324.00	0821	145.00	x additional point
Comparison method, 31,5 Hz - 16 kHz, including 11 frequencies, for LS2P only	0830	1 108.00	0831	145.00	x additional point
Accelerometers, 10 Hz - 10 kHz	0840	564.00	0841	29.00	x additional point
Sensitivity and phase, including 31 frequencies					
Accelerometers, 0,4 Hz -160 Hz	0842	564.00	0843	29.00	x additional point
Sensitivity and phase, including 27 frequencies					
Portable vibration loggers	0846	994.00	0847	29.00	x additional point
Portable vibration calibrators, e.g. PCB 394C06	0848	457.00	0849	145.00	x additional point
Other vibration measurement devices	0850	case-specific			
Vibration measurement of constructions	0860	case-specific			
Expert services	0890	case-specific			
High Capacity Weight *					
High capacity weight M1-M2, 20 kg - 2000 kg			6217	1 098.00	
Force *					
Calibrations according to standard					
EN ISO 376 calibration one direction					
0,1 - 1,1 MN			6311	1 437.00	x number of pieces
10 - 100 kN			6313	1 221.00	x number of pieces
1 - 10 kN			6315	958.00	x number of pieces
0,1 - 1 kN			6317	801.00	x number of pieces
< 0,1 kN			6319	801.00	x number of pieces
EN ISO 376 calibration two directions					
0,1 - 1,1 MN			6325	2 695.00	x number of pieces
10 - 100 kN			6327	2 280.00	x number of pieces
1 - 10 kN			6329	1 744.00	x number of pieces
0,1 - 1 kN			6331	1 427.00	x number of pieces
< 0,1 kN			6333	1 427.00	x number of pieces
Applied calibration EN ISO 376, 2 posit. 1-direction					
0,1 - 1,1 MN			6341	842.00	x number of pieces
10 - 100 kN			6343	653.00	x number of pieces
1 - 10 kN			6345	558.00	x number of pieces
0,1 - 1 kN			6347	558.00	x number of pieces
< 0,1 kN			6349	558.00	x number of pieces
Applied calibration EN ISO 376, 2 posit. 2-direction					
0,1 - 1,1 MN			6461	1 505.00	x number of pieces
10 - 100 kN			6463	1 165.00	x number of pieces
1 - 10 kN			6465	992.00	x number of pieces
0,1 - 1 kN			6467	992.00	x number of pieces
< 0,1 kN			6469	992.00	x number of pieces
Charge of standards/hour					
0,1-1,1 MN, FSTM no 4			6551	case-specific	x working hours (h)
10-100 kN, FSTM no 3			6553	case-specific	x working hours (h)
1-10 kN, FSTM no 2			6555	case-specific	x working hours (h)
0,1-1kN, FSTM no 1			6557	case-specific	x working hours (h)
< 0,1 kN, FSTM no 5			6559	case-specific	x working hours (h)
Scale calibration in the force standard (crane scales, aircraft scales and all types of scales which are similar to these, single point load)					
Calibr. of weighing instrument in FSM m > 11 t			6611	case-specific	x working hours (h)
Calibr. of weighing instrument in FSM m = 1,2 t - 11 t			6613	case-specific	x working hours (h)
Calibr. of weighing instrument in FSM m = ≤ 1,1 t			6615	case-specific	x working hours (h)
Axle load weighing instrument 6 t or 10 t			6625	case-specific	x working hours (h)
Special devices					
Calibration of adhesiotester			6637	558.00	x number of pieces

Service	Service number	Basic fee EUR	Service number	Additional/hourly fee EUR	
Torque *					
Torque wrenches					
Calibration of wrench, 1-dir, $M \leq 2$ kNm/piece			6677	227.00	x number of pieces
Add charge for second direction, $M \leq 2$ kNm/piece			6679	308.00	x number of pieces
Additional charge for electrical tools/piece			6693	32.00	x number of pieces
Charge for measurement points more than 3			6695	69.00	x number of pieces
Tools with actuator					
One measuring point $M \leq 2$ kNm			6709	431.00	number of pieces
Additional points $M \leq 2$ kNm			6719	67.00	number of pieces
Torque wrench calibration devices					
Devices with torque transducers $M \leq 2$ kNm					
one direction			6747	615.00	x number of pieces
two directions			6749	984.00	x number of pieces
Cal. of tool torque tester with rider beam			6781	838.00	x number of pieces
Torque transducer calibration					
According to EURAMET cg-14 (EA-10/14)					
$M \leq 50$ Nm 1-direction			6851	750.00	x number of pieces
$M \leq 50$ Nm 2-directions			6853	1 100.00	x number of pieces
50 Nm $\leq M \leq 2$ kNm 1-direction			6865	876.00	x number of pieces
50 Nm $\leq M \leq 2$ kNm 2-directions			6867	1 326.00	x number of pieces
2 kNm $< M \leq 20$ kNm 1-direction			6871	1 076.00	x number of pieces
2 kNm $< M \leq 20$ kNm 2-directions			6873	1 570.00	x number of pieces
If two measuring bridges are calibrated from the same transducer at the same time the price is multiplied by 1.25					
Liquid Flow*					
Liquid flow meter calibration, reference standard D100, $15 < DN \leq 50$			6841	1 653.00	x number of pieces
Liquid flow meter calibration, reference standard D500, $150 < DN \leq 500$			6831	2 481.00	x number of pieces
Liquid flow meter calibration, national standard D200, $10 < DN \leq 200$			6821	3 033.00	x number of pieces
Charge of liquid flow standards/hour					
Reference standard D100, $15 < DN \leq 50$			6879	case-specific	x working hours (h)
Reference standard D500, $150 < DN \leq 500$			6881	case-specific	x working hours (h)
Reference standard D200, $10 < DN \leq 200$			6883	case-specific	x working hours (h)
VTT MIKES Kajaani, other services*					
Expert service	6990	case-specific			
Comparison	6960	case-specific			
Other basis of charge (shipment)					
Shipment costs within Finland (not insured)					
$m < 7,5$ kg			7561	22.00	
$7,5$ kg $< m < 15$ kg			7563	25.00	
15 kg $< m < 30$ kg			7565	44.00	
30 kg $< m < 70$ kg			7567	68.00	
Large package surcharge (in addition to shipment costs)			7569	48.00	
- package's length plus girth [(2 x width) + (2 x height)] combined exceeds 330 cm, but does not exceed 419 cm					
Special shipment (package over maximum limits)			7571	case-specific	
- actual weight > 70 kg, or length exceeds 270 cm, or length plus girth [(2 x width) + (2 x height)] combined exceeds 419 cm					
Shipment cost according to an agreement			7551	case-specific	
Expert services, guides					
Expert service for measurement problems	5950	case-specific			
RR-test for measurement process	5954	case-specific			
Expert service for setting up calibration system	5956	case-specific			
Calibration instruction CD for dimensional measuring instruments	5960	2 937.00			
Calibration instructions, no. pc.			5961	175.00	x number of pieces
S. Saxholm, M. Rantanen, Measurement of pressure, 38 pp. (in Finnish)	5980	case-specific			

Service	Service number	Basic fee EUR	Service number	Additional/ hourly fee EUR	
Other services					
Certificates and document copies			7401	79.00	x working hours (h)
Publications			7501	32.00	x number of pieces
Travel costs	7600	case-specific			
Kilometer allowance	7622	case-specific			
Daily allowance	7624	case-specific			
Travelling time	7626	159.00			
Expert services	7690	case-specific			
Other services, metrology	7700	case-specific			
MIKES-AALTO, Metrology Research Institute, calibrations	7720	case-specific			
Meeting fee	7730	case-specific			
Other products (metrology)	7740	case-specific			
Rent of premises	7800	case-specific			

* performed in VTT MIKES Kajaani

ADDRESSES

VTT MIKES (Espoo, Otanlempi)

Post address: PL 1000
FI-02044 VTT
Finland

Street and cargo address: Tekniikantie 1
FI-02150 ESPOO
Finland

VTT MIKES Kajaani

Post address: Tehdaskatu 15
Puristamo 9P19
FI-87100 KAJAANI
Finland

Street address: Tehdaskatu 15
Puristamo 9D17
FI-87100 KAJAANI
Finland

Cargo address: Sokajarventie 9
Puristamo 9D3
FI-87100 KAJAANI
Finland

Other contact informatio

Email: kalibroinnit@vtt.fi
Tel. Exchange: +358 20 722 111

TERMS OF CONTRACT AND DELIVERY

The calibration will be performed in accordance with the valid scope of competence.
However, the total measurement uncertainty of the calibration may be larger than indicated in our valid scope of competence due to the device being calibrated.

Terms of payment

The calibration shall be invoiced after the work has been completed unless otherwise agreed. Invoices shall be paid within 21 days of the date of the invoice.
Interest on overdue payments shall be charged in accordance with the Finnish Interest Act (633/1982).

Other terms

VTT has a right to mention the Commission and the name of the Client as a reference.

The VTT General Terms of Contract* will apply to the Commission with the following exceptions:

- Section 7 does not apply to calibration commissions.
- Failure of the measurement standard shall be considered as Force Majeure and VTT shall be released from its obligations under the Contract.

* the general terms of contract of the VTT Technical Research Centre of Finland: https://www.vttresearch.com/sites/default/files/files/vtt_general_terms.pdf

Unless otherwise agreed upon, an electronically signed calibration certificate or measurement report is delivered to the client.

Field calibration costs are always case-specific.

The adjustment of the measurement instrument is not included in calibration; the adjustment of the instrument must be separately agreed.

Sales tax, VAT

Value added tax (VAT) and any other taxes and fees imposed by foreign authorities shall be added to the price, when applicable.

Urgency fee

If a calibration is performed urgently as per the client's request thereby bypassing other jobs in queue, the calibration fee may be charged in double.

Delivery

Before delivering the measurement instruments to VTT MIKES the client has to agree with VTT MIKES about the calibration and its delivery time.

An accompanying letter must be sent with the device/devices detailing:

- instrument to be calibrated, the scales to be measured, measuring points etc.
- contact information including invoicing and delivery addresses.

The client must also include the preferred return method for the device. VTT MIKES will return the devices sent for calibration

in the client's packaging and will insure the shipment if specifically requested by the client.

VTT MIKES is not responsible for any instrument damage during transportation or shipment.

Possible transportation and shipment costs will be charged from the customer.