

QC System Price-List

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All prices net, EXW (tax, duty, transportation, support extra)

Item No.	Product	Explanation	required HW	Spec	Price per Unit
Hardware					
2000-300	KA3 - Klippel Analyzer 3 - default configuration (LSX), Set	incl. Laser Card, Speaker Card, XLR Card, power supply, cable set, project management software (dB-Lab 210)		H3	6.170 EUR
2000-310	KA3 - Klippel Analyzer 3 + internal Amp (ALSX)	incl. Amp Card, Laser Card, Speaker Card, XLR Card, power supply, cable set, project management software (dB-Lab 210)		H3	7.170 EUR
2000-325	KA3 - Klippel Analyzer 3 - special card configuration (ALS), Set	incl. Amp Card, Laser Card, Speaker Card, power supply, cable set, project management software (dB-Lab 210)		H3	6.300 EUR
2000-327	KA3 - Klippel Analyzer 3 - special card configuration (AL), Set	incl. Amp Card, Laser Card, power supply, USB cable, project management software (dB-Lab 210) recommended for dedicated LST, MPM, (M)SPM Lite application		H3	5.190 EUR
2000-324	KA3 - Klippel Analyzer 3 - special card configuration (L), set	incl. Laser Card, power supply, USB cable, project management software (dB-Lab 210), recommended for wireless (e.g. Bluetooth®) speaker or headphone or noise and vibration testing		H3	4.190 EUR
2000-326	KA3 - Klippel Analyzer 3 - EoL configuration (Q), Set	incl. QC-Card, power supply, cable set		H3	4.480 EUR
4000-100	PA - Production Analyzer	QC hardware incl. cable set		H4	4.200 EUR
Other KA3 card configurations are available on request.					
QC Software for end-of-line testing (EOL)*					
4004-001	QC STANDARD Software, Release QC6	full EOL-testing software for ultra-fast and complex measurements, incl. tasks (SPL, IMP, SAN, PP, IO), QC Start and dB-Lab 210	KA3, PA, Dongle3	C3	3.300 EUR
4004-200	QC Basic Software, Release QC6	cost-efficient EOL-testing software for simple applications, incl. SPL-Impedance task, QC Start and dB-Lab 210; easy upgrade option to QC STANDARD	KA3, PA, Dongle3	C3	1.500 EUR
4004-300	QC Remote Configuration Software, Release QC6	allows modification of limits and set up without hardware	Dongle3	S14	1.300 EUR
Transducer Parameter Identification Modules*					
4000-262	IMP - Impedance Task	QC-Task: Linear Parameter Measurement (TS-Parameter)	KA3, PA	C3	950 EUR
4000-265	TSX - QC Laser Fitting	Add-on for IMP Task: Thiele Small parameter identification with laser	KA3	C3	870 EUR
4000-230	MSC - Motor + Suspension Check	QC-Task: fast measurement of voice coil offset and suspension asymmetry	KA3, PA	S13	4.950 EUR
4000-260	BAC - Balanced Armature Check	QC-Task: test armature offset of BA drivers for earphones and hearing aids	KA3, PA	S39	5.200 EUR
Frequency Response + Distortion Modules*					
4000-240	ALD - Air Leak Detection	QC-Task: detect air leaks in transducers and audio systems	KA3, PA	S18	3.200 EUR
4000-243	ALS - Air Leak Stethoscope	QC-Task: localization of air leaks in loudspeaker systems	KA3, PA	S30	2.800 EUR
4000-263	SPL - Sound pressure based acoustic tests	QC-Task: measurement of frequency response, THD and Rub&Buzz	KA3, PA	C3	1.400 EUR
4000-200	MHT - Meta Hearing Technology	Add-on for SPL Task: defect detection beyond human hearing	KA3, PA	S20	1.370 EUR
4000-245	EQA - Equalization & Alignment Standard	QC-Task: automatic or assisted adjustment of user-defined level or frequency response	KA3, PA	S33	680 EUR
4000-270	DCX - Dynamic DC Check (Pre-release)	Add-on for SPL and EQA Task: measurement of AC/DC displacement with laser (DC input modification of Production Analyzer Hardware required)	KA3, PA	S37	3.200 EUR
4000-266	3DL - Spectrogram 3D Limits (Pre-release)	Add-on for SPL Task: powerful and intuitive defect (Rub & Buzz) analysis based on auditory time/frequency (spectrogram) analysis	KA3, PA, Dongle3	S63	1.000 EUR
4000-267	SAN - Spectrum Analysis (formerly Coherence)	QC-Task: FFT spectrum, frequency response, A-weighted SPL and distortion with/without noise generator or user-defined stimulus for noise & vibration or audio system testing	KA3, PA	S65	900 EUR

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Simulation, Auralization Modules*					
1001-104	DIF-AUR - Difference-Auralization (Pre-release)	auralization of defect symptoms based on signal differences	Dongle2/3	S22	3.800 EUR
Transducer Part + Material Parameter Measurement*					
2500-101	SPM Pro Bench	Measurement Bench without clamping parts for SPM Pro/Lite, LST		C2, C6	6.640 EUR
2500-300	LST Bench Set - for Internal Laser	for QC: LST testing of spiders, surrounds, cones, passive radiators, incl. internal laser mounting and adjustment slider		C6	950 EUR
2500-310	LST Bench Set - for External Laser	for QC: LST testing for RnD: linear SPM & MPM measurements of spiders, surrounds, cones, passive radiators, incl. external laser mounting and adjustment bar		C6	1.400 EUR
2500-142	LST - Internal Laser Fixture Set	2-dimensional internal Laser mounting and adjustment unit, incl. mounting brackets and screws, distance adjustment washer set		C6	300 EUR
2500-141	LST - External Laser Fixture	2-dimensional external laser mounting and adjustment boom, incl. sensor slide rail, laser sensor rod		C6	740 EUR
2500-302	Ring Set	clamping parts for SPM Bench + LST Bench		C2	1.310 EUR
2500-301	Cone Set (plastic)	clamping parts for LST Bench (SPM Bench)		C6	490 EUR
4000-242	LST Lite - Linear Suspension Test Lite	QC-Task: compliance check of spiders, cones and surrounds	KA3/PA + Dongle 2/3	C6	1.050 EUR
4000-244	LST Pro - Linear Suspension Test Professional	QC-Task: LST Lite features + monitoring mass and stiffness deviation for passive radiators	KA3/PA + Dongle2/3	C6	2.000 EUR
4000-248	LST Pro Upgrade	upgrade from LSI Lite to LSI Pro		C6	950 EUR
2500-604	MSPM Bench Set, Rev. 1.1	Small measurement bench for linear + nonlinear testing of small suspension parts (micro-speakers, headphones), Rev. 1.1 incl. Extended Clamping Ring + Adapter, 70 mm		A12	1.800 EUR
Post-Processing Tools*					
4000-225	STAT - Statistics (Pre-release)	statistical overview of Klippel measurement data (1D and 2D data), pool-based visualization of measures allows quick assessment of variances and comparisons between test object groups	Dongle3	S48	1.260 EUR
4000-220	MSP - Match-Speaker-Tool	find best matching pairs from a pool of speakers	Dongle2	S15	1.900 EUR
Software Add-ons*					
1001-107	SYN - External Synchronization	synchronize digital audio (e.g. Bluetooth) and trigger open-loop tests; option for QC-Task (QC-STANDARD or QC-Task required)	KA3, PA	S32	1.400 EUR
4000-250	PNI - Production Noise Immunity	coping with noisy environment; option for SPL Task (QC-STANDARD or SPL Task required)	KA3, PA	S21	2.300 EUR
4000-251	EXD Bluetooth - External Device Bluetooth (Pre-release)	stand-alone preset for EXD task: automated pairing and control of Bluetooth audio devices (pairing, profile control)	Dongle3	S31	500 EUR
4000-241	EXD Pro - External Devices Professional	QC-Task: integration and control of external lab and test equipment (e.g. GPIB, Bluetooth radio) based on user-definable custom step sequence	Dongle3	S31	1.000 EUR
QC Software Update					
4004-101	QC Update STANDARD System (V5 to V6)	update from version 5 to version 6 New Klippel Software Protection Dongle	Dongle3		1.400 EUR
4004-102	QC Update STANDARD System (V4 to V6)	update from version 4 to version 6 New Klippel Software Protection Dongle	Dongle3		1.900 EUR
4004-103	QC Update STANDARD System (V3 to V6)	update from version 3 to version 6 New Klippel Software Protection Dongle	Dongle3		2.300 EUR
4004-104	QC Update STANDARD System (V2 to V6)	update from version 2 to version 6 New Klippel Software Protection Dongle required.	Dongle3		2.700 EUR
4004-201	QC Update BASIC System (V5 to V6)	update from version 5 to version 6 New Klippel Software Protection Dongle	Dongle3		800 EUR

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4004-202	QC Update BASIC System (V4 to V6)	update from version 4 to version 6 New Klippel Software Protection Dongle	Dongle3		1.100 EUR
4004-203	QC Update BASIC System (V3 to V6)	update from version 3 to version 6 New Klippel Software Protection Dongle	Dongle3		1.300 EUR
4004-204	QC Update BASIC System (V2 to V6)	update from version 2 to version 6 New Klippel Software Protection Dongle	Dongle3		1.400 EUR
4004-010	QC Upgrade BASIC to STANDARD	upgrade QC BASIC (Vx) to QC STANDARD System (V6) New Klippel Software Protection Dongle	Dongle3		on request
Service					
6001-200	KLIPPEL QC Support Contract	1 year subscription, incl. software updates + email support by KLIPPEL staff (per unit)			1.800 EUR
6000-702	Manufacturer Calibration KA3 with 1 Card	KA3 calibration with formal certificate, recommended every 2 years			380 EUR
6000-703	Manufacturer Calibration KA3 with 2 - 6 Cards	KA3 calibration with formal certificate, recommended every 2 years			470 EUR
6000-001	Manufacturer Calibration DA, PA, PM8	DA, PM8 or PA calibration with formal certificate, recommended every 2 years			490 EUR
6000-130	Modification QC Card for use with external amplifier	modification KA3 QC Card for use with external amplifier		H11	150 EUR
6000-304	PA USBonly Hardware Modification + Calibration	PA modification to USBonly Version incl. Manufacturer Calibration		H4	740 EUR
6000-301	Production Analyzer Modification - High Sensitivity + Calibration	both speaker channels = High Sensitivity and Manufacturer Calibration		H4	520 EUR
6000-302	Production Analyzer Modification - Very High Sensitivity & Calibration	both speaker channels = Very High Sensitivity and Manufacturer Calibration		H4	520 EUR
6000-309	Production Analyzer Modification 0dB Mic Input Gain	both mic input channels adjusted to 0dB gain		H4	140 EUR
	Individual Production Analyzer Modification	several configurations (individual channels) are available			on request
	Multiplexer Modification	several configurations are available			on request
Accessories**					
Laser					
2103-250	Laser Set LK-H052 (for Production Analyzer), Rev. 2.0	50 mm +/- 10 mm, for LST (incl. Controller LK-G5001P rev.2.0, 2 m cable CB-A2, LEMO-XLR adapter for PA connection)	PA	A2	7.500 EUR
2102-042	Laser Set IL-065 for LST with PA	+/- 25 mm, for LST only (incl. Controller IL-1000, PSU, LEMO-XLR adapter for PA connection)	PA	C6	1.580 EUR
2102-044	Laser Set IL-065 for LST with KA3	+/- 25 mm, for LST only (incl. Controller IL-1000)	KA3	C6	1.430 EUR
Microphones					
2400-012	Mic 255 IEPE 1/2" Set (5m BNC cable)	low noise - high sensitivity standard mic, 50 mV/Pa, max. 135 dB, prepolarized cartridge, IEPE powered pre-amp; mic, case, sensitivity chart, mic clip, 5 m BNC cable included		A4	1.000 EUR
2400-501	Mic 46AE IEPE 1/2" Set (5m BNC Cable)	low noise - high sensitivity mic, 50 mV/Pa, max. 132 dB, prepolarized cartridge, IEPE powered pre-amp; incl. mic, case, sensitivity chart, mic clip, 5 m BNC cable		A4	1.780 EUR
2400-502	Mic 146AE IEPE 1/2" Set (5m BNC Cable)	low noise - high sensitivity - rugged mic, 50 mV/Pa, max. 132 dB, prepolarized cartridge, IEPE powered pre-amp; incl. mic, 2 rugged grids, 1 standard grid, calibration adapter for rugged grid, case, sensitivity chart, mic clip, 5 m BNC cable		A4	2.020 EUR

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2400-330	Mic 40PP IEPE 1/4" Set (5m BNC Cable)	QC test & ambient noise mic, 50 mV/Pa, max. 129 dB, prepolarized cartridge, IEPE powered pre-amp; incl. mic, case, sensitivity chart, mic clip, 5 m BNC cable		A4	720 EUR
2400-603	Mic 202E IEPE 1/2" Set (5m BNC Cable)	higher SPL - wider bandwidth mic, 14 mV/Pa, max. 143 dB, prepolarized cartridge, IEPE powered pre-amp; incl. mic, case, sensitivity chart, mic clip, 5 m BNC cable		A4	1.860 EUR
2400-503	Mic 46AM IEPE 1/2" Set (5m BNC Cable)	higher SPL - wider bandwidth mic, 14.5 mV/Pa, max. 143 dB, prepolarized cartridge, IEPE powered pre-amp; incl. mic, case, sensitivity chart, mic clip, 5 m BNC cable		A4	1.860 EUR
2400-504	Mic 40PP-S1 IEPE 1/4" Set (5m BNC Cable)	QC testing - higher SPL mic, 10 mV/Pa, max. 142 dB, prepolarized cartridge, IEPE powered pre-amp; incl. mic, case, sensitivity chart, mic clip, 2 m BNC cable		A4	700 EUR
2400-005	Mic 40PL IEPE 1/4" Set (2m SMB-BNC Cable)	QC testing - higher SPL mic, 10 mV/Pa, max. 142 dB, prepolarized cartridge, IEPE powered pre-amp; incl. mic, case, sensitivity chart, mic clip, 2 m SMB to BNC cable		A4	770 EUR
2400-310	Mic 301E IEPE 1/4" Set (3m BNC-Microdot Cable)	max. SPL - max. bandwidth mic, 3.2 mV/Pa, max. 155 dB, prepolarized cartridge, IEPE powered pre-amp; incl. mic, case, sensitivity chart, mic clip, 3 m Microdot to BNC cable		A4	1.970 EUR
2400-300	Mic 46BE-S5 IEPE 1/4" Set	max. SPL - max. bandwidth mic, 4 mV/Pa, max. 154 dB, prepolarized cartridge, IEPE powered pre-amp; incl. mic, case, sensitivity chart, mic clip, 2m SMB to BNC cable		A4	2.300 EUR
2400-301	Mic Supply Unit; IEPE type, IV11-S set	1-channel, BNC I/Os, 5 Vdc powered, switchable gain = 0 dB/10 dB, incl. 1 m BNC cable, BNC-XLR adapter, PSU		A4	720 EUR
2400-023	Mic Calibrator; GRAS 42AG Multifunction Sound Calibrator, Class 1, Set	Sound Pressure Calibrator for 1", 1/2", 1/4" mics, 94 or 114 dB at 250 Hz or 1 kHz, AAA battery supply, case, calibration certificate; Additional adapter 2400-024 required for Mic Sets MI17/MI17HL and MI18/MI18HL!		A4	1.590 EUR
2400-024	Mic Calibrator Adapter 1/4" for GRAS 42AG	Supplement item for GRAS 42AG Multifunction Sound Calibrator, Class 1 Adapter for MI17/MI1HL and MI18/MI18HL		A4	160 EUR
2400-020	Mic Calibrator; 4000 CL.1, 114dB @ 1kHz Set	Sound Pressure Calibrator for 1", 1/2", 1/4" mics, 114 dB at 1 kHz, 9 V battery supply, case, calibration certificate		A4	1.380 EUR
Amplifier					
2700-001	Amplifier QSC PLX 1802	2 channels 525 W at 4 ohm / bridged 1100 W at 8 ohm			1.300 EUR
2700-002	Amplifier QSC PLX 2502	2 channels 675 W at 4 ohm / bridged 1400 W at 8 ohm			1.400 EUR
2700-003	Amplifier QSC PLX 3602	2 channels 1100 W at 4 ohm / bridged 2600 W at 8 ohm			1.800 EUR
2700-008	Amplifier QSC GX 3 (230V)	2 channels 425 W at 4 ohm (only available as 230 V version, not for US)			500 EUR
2700-009	Amplifier QSC GX 5 (230V)	2 channels 700 W at 4 ohm (only available as 230 V version, not for US)			570 EUR
2700-010	Amplifier QSC GX 7	2 channels 1000 W at 4 ohm			900 EUR
Multiplexer					
2800-101	Multiplexer BNC	MUX81-42 BNC (Mic version)		A8	1.580 EUR
2800-102	Multiplexer XLR-IN	MUX81-42-XLR-IN (LINE-IN version, 8 x 1 or 4 x 2)		A8	1.470 EUR
2800-103	Multiplexer XLR-OUT	MUX81-42-XLR-OUT (LINE-OUT version, 1 x 8 or 2 x 4)		A8	1.470 EUR
2800-104	Multiplexer Speakon	MUX81-42-SPEAKON (Speaker version)		A8	1.950 EUR
Simulators					
2400-073	GRAS 44AA Mouth Simulator, according to ITU-T Rec. P51 Set	with built-in power-amplifier, incl. CCITT P51 jig, IEEE 269 jig, 24 Vdc power supply, 2 m BNC cable, XLR-BNC adapter		A14	2.990 EUR
2400-077	GRAS 44AB Mouth Simulator, according to ITU-T Rec. P51 Set	without built-in power-amplifier, incl. CCITT P51 jig, IEEE 269 jig		A14	2.500 EUR
2400-079	GRAS 45CC-2 Headphone Test Fixture	Two channel (Stereo) Test Fixture for On-Ear (supra-aural) and Over-Ear (circum-aural) Headphones		A14	5.570 EUR

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2400-080	GRAS 45CC-6 Headset Test Fixture Set	Two channel (Stereo) Test Fixture for On-Ear (supra-aural) and Over-Ear (circum-aural) Headsets		A14	8.290 EUR
2400-071	GRAS 43AC-S1 Ear Simulator Kit according to IEC 60318-4	Single channel (Mono) Ear Simulator Kit for In-Ear Headphones		A14	4.310 EUR
2400-075	GRAS 43AA-S2 Ear Simulator Kit according to IEC 60318-1 & -2	Single channel (Mono) Ear Simulator Kit for On-Ear (supra-aural) and Over-Ear (circum-aural) Headphones		A14	4.500 EUR
2400-078	GRAS 45CA-4 Ear Simulator Kit according to IEC 60318-1	Two channel (Stereo) Ear Simulator for On-Ear (supra-aural) and Over-Ear (circum-aural) Headphones		A14	12.080 EUR
2400-081	GRAS 45CC-4 Ear Simulator Kit according to IEC 60318-1	Two channel (Stereo) Ear Simulator for On-Ear (supra-aural) and Over-Ear (circum-aural) Headphones		A14	8.440 EUR
2400-082	GRAS 45CC-8 Ear & Mouth Simulator Kit according to IEC 60318-1 Set	Two channel (Stereo) Ear Simulator for On-Ear (supra-aural) and Over-Ear (circum-aural) Headsets		A14	11.240 EUR
Various Accessories					
2800-005	Manual Sweep Controller	intuitive control of frequency and level for the manual sweep		A6	240 EUR
2800-004	Bar Code Scanner	quick data entry via Barcode/QR-Code		A6	300 EUR
2800-011	Temperature + Humidity Sensor (dB-Lab 210.xxx or QC6 required)	automatic recording of temperature + humidity	KA3, PA + QC6	A6	390 EUR
2800-403	Avantree DG50 Leaf (USB Bluetooth® Interface)	Bluetooth USB audio interface dongle for QC software framework applications; stand-alone Bluetooth radio with manual operation and extended codec support		A6	on request
2800-405	Laird BT820 (USB Bluetooth® Radio)	Bluetooth radio USB dongle recommended for QC software framework applications – supports automated pairing and profile control via Windows Bluetooth radio		A6	on request
2800-500	Genelec 8010A (Compact, Active Two-way Speaker)	Compact, analog sound source with balanced XLR input (96 dB, 74 Hz – 20 kHz) for EoL testing of microphones, headsets, voice controlled devices...		A15	on request
2800-501	Genelec 8330A SAM (Active Two-way Speaker)	DSP controlled sound source with balanced XLR input (104 dB, 58 Hz – 20 kHz) for testing microphones, headsets, voice controlled devices...		A15	on request
2800-502	Genelec 8331A SAM (Active Three-way Speaker)	DSP controlled coaxial point source with balanced XLR input (104 dB, 58 Hz – 20 kHz); reference sound source for testing microphones, headsets, voice controlled devices...		A15	on request
2800-510	GLM™ Genelec Loudspeaker Manager User Kit	Accessory for Genelec SAM speakers: GLM network adaptor and microphone for frequency response calibration and control		A15	on request
2800-511	VESA Adapter for Genelec Speakers	Accessory for Genelec speakers: VESA mounting adapter plate (75/100 mm)		A15	on request
2800-400	Prologix GPIB-USB Controller	GPIB-Controller for USB, required for External Devices Module	PA	S31	300 EUR

* Module price per 1 license, running on 1 hardware unit or 1 USB dongle.

** Prices for accessories from other suppliers (microphones, lasers, amplifiers, simulators) are valid only in combination with KLIPPEL Analyzer System.

Also available on request:

- Various types of microphones from Microtech Gefell and G.R.A.S.
- Several cables

This document is subject to change without notice. Errors and omissions excepted.