

QC System Price-List

Klippel GmbH, Germany
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 Currency EUR

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

Item No.	Product	Explanation	Compat.	HW Spec	Price per Unit
Hardware					
2000-300	KA3 - Klippel Analyzer 3 (LSX) default configuration, 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 (ALSX), default with internal Amp, Set	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 (ALS) special configuration, Set	incl. Amp Card, Laser Card, Speaker Card, power supply, cable set, project management software (dB-Lab 210)		H3	6.300 EUR
2000-330	KA3 - Klippel Analyzer 3 (LX) special configuration, Set	incl. Laser Card, XLR Card, power supply, cable set, project management software (dB-Lab 210), recommended for wireless (e.g. Bluetooth®) speaker, headphone testing		H3	5.060 EUR
2000-324	KA3 - Klippel Analyzer 3 (L) special configuration, Set	incl. Laser Card, power supply, cable set, project management software (dB-Lab 210), recommended for wireless (e.g. Bluetooth®) speaker, headphone or noise and vibration testing		H3	4.190 EUR
2000-333	KA3 - Klippel Analyzer 3 (LQ) EoL configuration, Set	incl. Laser Card, QC Card, power supply, cable set, project management software (dB-Lab 210), recommended for dedicated LST application		H3	5.470 EUR
2000-326	KA3 - Klippel Analyzer 3 (Q) EoL configuration, Set	incl. QC-Card, power supply, cable set		H3	4.480 EUR
4000-100	PA - Production Analyzer	QC hardware incl. cable set		H4	3.300 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+Dongle3 PA2+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+Dongle3 PA2+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+Dongle3	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+Dongle2 3	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+Dongle2 3	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+Dongle2 3	S18	3.200 EUR
4000-243	ALS - Air Leak Stethoscope	QC-Task: localization of air leaks in loudspeaker systems	KA3 PA+Dongle2 3	S30	2.800 EUR
4000-263	SPL - Sound pressure based acoustic tests	QC-Task: measurement of frequency response, THD and Rub&Buzz	KA3 PA+Dongle3	C3	1.400 EUR
4000-200	MHT - Meta Hearing Technology	Add-on for SPL Task: defect detection beyond human hearing	KA3 PA+Dongle2 3	S20	1.370 EUR
4000-268	HI-2 - Weighted harmonic distortion	Add-on for SPL Task: amplitude response of weighted harmonic distortion components versus frequency (HI-2)	KA3 PA+Dongle3	AN7	860 EUR
4000-245	EQA - Equalization + Alignment Standard	QC-Task: automatic or assisted adjustment of user-defined level or frequency response	KA3 PA+Dongle2 3	S33	680 EUR
4000-270	DCX - Dynamic DC Check	Add-on for SPL and EQA Task: measurement of AC/DC displacement with laser (DC input modification of Production Analyzer Hardware required)	KA3 PA+Dongle3	S37	3.200 EUR

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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+Dongle3	S65	900 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+Dongle2 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 LST Lite to LST 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	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+Dongle2 3	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+Dongle2 3	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) QC STANDARD Software, Release QC6 or higher required	KA3 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	Dongle2 3	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

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Item No.	Product	Explanation	Compat.	HW Spec	Price per Unit
4004-201	QC Update BASIC System (V5 to V6)	update from version 5 to version 6 New Klippel Software Protection Dongle	Dongle3		800 EUR
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 term, incl. software updates + email support by KLIPPEL staff (per unit)			1.900 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
6000-301	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
Accessories**					
Laser					
2103-250	Laser Set LK-H052 (for Production Analyzer), Rev. 2.0	50mm +/-10mm, for LST (incl. Controller LK-G5001P rev.2.0, 2m cable CB-A2, LEMO-XLR adapter for PA connection)	PA	A2	7.500 EUR
2102-044	Laser Set IL-065 for LST with KA3	80mm +/-20mm, for LST only (incl. Controller IL-1000)	KA3	C6	1.430 EUR
2102-042	Laser Set IL-065 for LST with PA	80mm +/-20mm, for LST only (incl. Controller IL-1000, PSU, LEMO-XLR adapter for PA connection)	PA	C6	1.580 EUR
Microphones					
2400-012	Mic 255 IEPE 1/2" Set	low noise - high sensitivity standard mic, 50 mV/Pa, max. 135 dB, prepolarized cartridge, IEPE powered pre-amp; incl. mic, case, sensitivity chart, mic clip, 5 m BNC cable		A4	1.000 EUR
2400-501	Mic 46AE IEPE 1/2" Set	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	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
2400-330	Mic 40PP IEPE 1/4" Set	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	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

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2400-503	Mic 46AM IEPE 1/2" Set	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	QC testing - higher SPL mic, 10 mV/Pa, max. 142 dB, prepolarized cartridge, IEPE powered pre-amp; incl. mic, case, sensitivity chart, mic clip, 5 m BNC cable		A4	700 EUR
2400-608	Mic 301E IEPE 1/4" Set	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, 5 m BNC to Microdot cable		A4	1.920 EUR
2400-507	Mic 46BE 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, 5m BNC to Microdot cable		A4	2.150 EUR
2300-102	Adapter; XLR male - BNC female	XLR male to BNC female socket adapter (from BNC output to XLR input), needed for IEPE supplied mics used at Phantom powered inputs			25 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/MI17HL and MI18/MI18HL		A4	160 EUR
Amplifier					
2700-001	Power Amplifier; QSC PLX 1802	2x 900/575/330 W @ 2/4/8 ohm, 1x 1800/1200 W @ 2/4 ohm			1.300 EUR
2700-002	Power Amplifier; QSC PLX 2502	2x 1250/750/450 W @ 2/4/8 ohm, 1x 2500/1500 W @ 2/4 ohm			1.400 EUR
2700-003	Power Amplifier; QSC PLX 3602	2x 1800/1250/775 W @ 2/4/8 ohm, 1x 3600/2600 W @ 2/4 ohm			1.800 EUR
2700-014	Power Amplifier; QSC PL380	2x 4000/2500/1500 W @ 2/4/8 ohm, 1x 8000/5000 W @ 2/4 ohm			3.200 EUR
2700-008	Power Amplifier; QSC GX 3 (230V)	2x 425/300 W @ 4/8 ohm, (only available as 230 V version, not for US)			500 EUR
2700-009	Power Amplifier; QSC GX 5 (230V)	2x 700/500 W @ 4/8 ohm, (only available as 230 V version, not for US)			570 EUR
2700-010	Power Amplifier; QSC GX 7	2x 1000/725 W @ 4/8 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, 5 m BNC cable, XLR-BNC adapter		A14	3.000 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	5.680 EUR
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	8.340 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	4.350 EUR

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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	4.540 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	12.320 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	8.610 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	11.460 EUR
Various Accessories					
2800-005	Manual Sweep Controller	intuitive control of frequency and level for the manual sweep		A6	260 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+Dongle3	A6	390 EUR
2800-407	MegaSig U980 Bluetooth® Converter Set	Professional, analog Bluetooth converter with USB control incl. cable set and software interface to Klippel R&D and QC Software		A6	1.740 EUR
2800-403	Interface; USB - Bluetooth® Interface, Avantree DG50 Leaf	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	Interface; USB - Bluetooth® Radio, Laird BT820	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	Converter; USB - GPIB, Prologix	GPIB-Controller for USB, required for External Devices Module		S31	300 EUR

* Module price per 1 license, running on 1 hardware unit or 1 USB dongle.
 The column "Compat.HW" informs about the device type to which the module can be licensed.

** 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.