

Interacoustics Kamplex AA222/AA220

Audiometer and Middle Ear Analyzer in one instrument



AA222/AA220

The AA222/AA220 is the most comprehensive combination of middle ear analyzer and clinical audiometer available. It combines all of the diagnostic middle ear analyzer tests found on the new AT235 and most of the features available on our popular AD229 diagnostic audiometer – all in one small, lightweight package. This makes the AA222/AA220 ideal for the new clinic, for travelling to alternate locations, and for clinical situations where space is at a premium.



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General Technical Specifications

Standards:

Safety: EN60601-1, Class 1, Type B
EMC: EN60601-1-2
Impedance: EN60645-5/ANSI S3.39,
Type 2
Audiometer: EN60645-1/ANSI S3.6,
AA220: Type 3 Tone Audiometer
AA222: Type 2 Tone Audiometer,
Speech Type B-E

Medical CE-mark:

The CE-mark indicates that Interacoustics A/S meets the requirements of the Annex II of the Medical Device Directive 93/42/EEC. Approval of the quality system is made by TÜV – identification no. 0123.

Impedance Measuring system:

Probe tone:
Frequency: 226 Hz.
Level: 85 dB SPL with AGC.

Air Pressure:

Control: Automatic.
Indicator: Measured value is displayed on the graphical display.
Range: -600 to +300 daPa.
Safety Limitations: -800 daPa and +600 daPa.
Pressure Change Rate: Minimum (50 daPa/s), medium, maximum or automatic with minimum speed at compliance peak. Selectable in the setup.

Compliance:

Range: 0.1 to 6.0 ml (Ear volume: 0.1 to 8.0 ml).

Types:

Tympanometry: Automatic, where the start and stop pressure can be userprogrammed from the setup menu.
Eustachian Tube Function: ETF test for use when the eardrum is intact.

Inputs:

AA222 only:

CD player or tape recorder. - 1 or 2 channels.
External microphone for live speech.
Patient response switch.

Output:

Audiometry: TDH39 headphones, left and right.

Bone Conduction: B71 bone conductor.

Contra: TDH39 headphone or CIR22 for contralateral reflex stimulation.

AA222 only:

Free field 1 and 2: Output for external 2 channel power amplifier.
Monitor: Monitor earphone disconnects the internal monitor loudspeaker when inserted.

Various:

USB: Input/output for PC connection.
Keyboard: Connection for external keyboard, standard PC type.

Attenuator:

Range: 0 to 130 dB in 1 or 5 dB steps. Typical range is -10 to 120 dB HL. Range is individual for different modes – see table next page.

Test Types - Acoustic Reflex:

Automatic Reflex:

Two independent user selectable protocols. Series of fixed intensities available.
Automated intensity search functions available for threshold search and reflex growth indication.
Free mixing of Ipsi and Contra.

Manual Reflex:

Manual control of all stimuli.
May also be used to redo part of automated test results.

Reflex Decay:

Manual control, with stimulus duration of 10 sec. Ipsi or Contralateral stimulation.

Test Types - Audiometer:

Manual Audiometry:

Automatic Audiometry: Auto threshold according to ISO 8253-1 (Patient controlled Hughson Westlake). The threshold is determined by the activation of the patient response.

SISI: With automatic scoring calculation (5 dB included for familiarisation).

Warble: 5Hz sine, +/- 5% modulation.
ABLB: Automatic loudness balance test (Fowler).

Stenger: Binaural pure tone .

AA222 only:

Live voice speech.
Prerecorded speech.
Binaural speech.
Stenger: speech.

Memory:

Internal memory for two ears.
Each ear: 6 Ipsi and 6 Contra recordings. Each may have up to 6 stimuli. Also, there is memory for additional manual reflex recordings. (Total max. 78 reflexes per ear).

Printer:

Type: Thermal printer with recording paper in rolls.
Paper Width: 112 mm.

Examples of Compatible Windows

Software:

Interacoustics Database OtoAccess™ and Diagnostic Modules software.
PrintView for PC monitoring and printing.
IA-NOAH-Imp and IA-NOAH-Aud Module for interfacing to NOAH.

Cabinet: Plastic.

Power Supply:

UPS400 (included) 100 - 240V.

Consumption:

15VA, max. 45VA.

Operation Environment:

Temperature: 15 - 35 °C.
Rel. Humidity: 30 - 90%.

Storing / Handling:

Temperatures below 0 °C and above 50 °C may cause permanent damage on the instrument and its accessories.

Warm up time: 10 minutes at room temperature (20 °C).

Dimensions (LxWxH): 36x26x10 cm / 14x10x4 inches.

Weight: 2.8 kg / 6 lbs.

Air Freight Packing (LxWxH): 48x31x37 cm / 19x22.2x14.6 inches.

Gross weight: 6.5 kg/12.4 lbs.

SPECIFICATION CAN BE SUBJECT TO CHANGE WITHOUT NOTICE

THE UK'S LEADING SOURCE OF AUDIOLOGICAL INSTRUMENTS

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General Technical Specifications

Frequencies and Intensity Ranges:

Frequency	Reflex								Audiometry			
	Contralateral						Ipsilateral					
	TDH39		EAR-Tone 5A		Insert/CIR22				TDH39		EAR-Tone 5A	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Hz	dBHL		dBHL		dBHL		dBHL		dBHL		dBHL	
125	-10	90	-10	90	-	-	-	-	-10	90	-10	90
250	-10	110	-10	105	0	100	-	-	-10	110	-10	105
500	-10	120	-10	110	0	105	10	105	-10	120	-10	110
750	-10	120	-10	115	-	-	-	-	-10	120	-10	115
1000	-10	120	-10	120	0	110	10	110	-10	120	-10	120
1500	-10	120	-10	120	-	-	-	-	-10	120	-10	120
2000	-10	120	-10	120	0	105	10	105	-10	120	-10	120
3000	-10	120	-10	120	0	100	10	100	-10	120	-10	120
4000	-10	120	-10	115	0	95	10	100	-10	120	-10	115
6000	-10	120	-10	100	-	-	-	-	-10	120	-10	100
8000	-10	110	-10	95	-	-	-	-	-10	110	-10	95
WB noise	-10	120	-10	120	0	100	10	105	-	-	-	-
LP noise	-10	120	-10	120	0	100	10	105	-	-	-	-
HP noise	-10	120	-10	120	0	100	10	105	-	-	-	-

Included Parts AA222/AA220:

TDH39 Audiometric headset
CIR22 Insert earphone for contralateral reflex stimulation or masking or monitoring
B71 Bone conductor
Patient response button
ATP-AT235u Universal probe system with shoulder strap, wrist strap
K305 Box of 65 assorted eartips
TPR26 3 rolls of recording paper
UPS400 External switch mode power supply
Power cable 120 or 230 V (Please specify)
Dust cover
Operation Manual CD
Multilingual CE manual

Optional Parts AA220:

EARtone 5A Insert phones
Audiocups
TDH39 Single earphone w. HBZ235u headband for contralateral reflex stimulation
ACC25 Carrying case
CAT40 Calibration unit, 0.2-0.5-1-2-3-4-5 ml
IES-2 Impedance ear simulator
GSE10 RS232 Galvanic isolation adapter

Optional Parts AA222:

EARtone 5A Insert phones
Audiocups
TDH39 Single earphone with HBZ26 headband
ACC25 Carrying case
CAT40 Calibration unit, 0.2-0.5-1-2-3-4-5 ml
IES-2 Impedance ear simulator
GSE10 RS232 Galvanic isolation adapter
AFC8 Sound cabin connection panels
AP12 2x12 Watt external power amplifier
ALS7 Free field loudspeaker
EM400 Electret talk back microphone
MTH400 Monitor headset
MTH400M Monitor headset w. boom mic.
OtoAccess™ Database and diagnostic modules software

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