Clinical Middle Ear Analyzer AZ26

- Efficient Middle Ear Examinations

Impedance *precision*

The AZ26 clinical impedance audiometer is built to meet the demands of clinics and hearing specialists who require a comprehensive middle ear analyzer.

Tympanometry with a range of pressure limits is available together with an extensive test battery of acoustic reflex tests which include reflex decay and latency measurement. Eustachian Tube Function can be evaluated with a normal eardrum or with a perforation. To permit easy checking of hearing thresholds, an air conduction audiometer is incorporated within the AZ26.

All testing can be performed manually or automatically and pre-programmable test sequences may be run automatically by the selection of a single button, thus providing quick and easy diagnostic evaluation. To ensure easy and accurate diagnosis, all test results are presented on-line as clear graphical records on the high resolution LCD screen. Printouts are available either using the fast built-in thermal printer or via connection to a PC. As with all Interacoustics products, the AZ26 is fully compatible with NOAH.

leading diagnostic solutions

Interacoustics®

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- Efficient clinical middle ear examinations

Tympanometry

When performing tympanometry in manual mode the pressure can be adjusted using the precision rotary control. This ensures that the operator can make accurate adjustments. In automatic mode, pressure limits and pump speed can be pre-set from a range of values. All results are displayed on-line and may be shown in either a compensated or non-compensated format.

Reflexes

Acoustic reflexes may be recorded ipsilaterally or contralaterally using a wide range of stimuli which includes various types of noise. 8 reflex tests per ear may be recorded. In the automatic test mode screening procedures as well as advanced procedures which may reveal threshold and reflex growth are available. Pressure offset may be applied.

Decay

10 second or 30 second decay tests are available with ipsi- or contralateral stimulation. The resulting decay value is then calculated and displayed.

Latency

A very detailed recording of the first 300ms of the reflex following stimulation can be displayed for evaluation. The latency time is automatically calculated. Both ipsi- and contralateral stimulation are available.

ETF 1

Eustachian Tube Function for ears with unperforated eardrums can be evaluated by recording three tympanograms on the same screen. This method uses the William's procedure.

ETF 2

For ears with perforated eardrums the Toynbee maneuver can be employed to evaluate the Eustachian Tube.

Probe System

The probe design of the AZ26 has been optimized for easy handheld operation as well as for use with the clinical headband. When used with the headband the probe tip itself can be detached enabling self-suspended positioning in the ear. This arrangement provides the greatest possible accuracy which is particularly important in the clinical evaluation of small deflection reflexes and in decay recording. Fitting the eartip to the ear canal is assisted by status indicators on the instrument's LCD screen as well as on the probe itself.

A clinical headband is included with the AZ26.

Audiometry

An air conduction audiometer is provided for determining hearing threshold either manually or by using a patient controlled automatic test procedure.

Special

Four different automatic test sequences may be easily programmed into the AZ26. Use of these predetermined procedures enables fast and reliable testing which may, if required, be performed by an assistant.

Data Storage with Windows® Based Software

Transferring data to a PC is possible by two different applications. The Interacoustics database platform OtoAccess™ enables data collection from multiple instrument sources into one patient file. Hearing aid information may also be included. NOAH hearing aid fitting software will also integrate the test data when used with the Interacoustics NOAH impedance module software.

Custom Made Auto Tests

The AZ26 is very easy to operate in both the manual and automatic modes. The user is not restricted to working with the pre-set automatic procedures which are presented as factory default settings. If required, test parameters and automated test routines can be tailored to individual requirements by modifying the user accessible set-ups.

Automatic Tympanometry

Pump speed and pressure limits as well as the direction of pressure sweep may be changed to meet specific requirements.

Special - An Automatic Test Sequence

Four different test sequences may be programmed by the user. In each test sequence the user has complete freedom in tailoring the procedure to meet their desired characteristics. Using this facility it is possible to test both ears consecutively and to have a printout automatically produced upon completion of the tests. This highly flexible system can provide time saving yet accurate procedures in the clinic.

Automatic ETF Tests

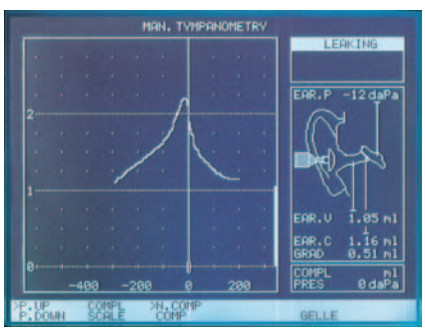
Pressure limits and timing characteristics can be modified as requested.

Automatic Audiometry

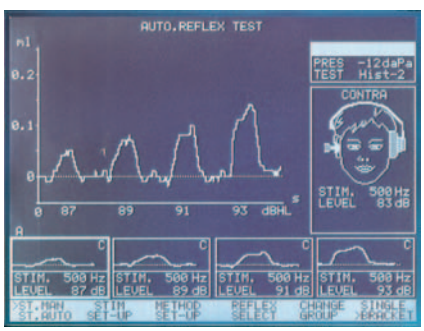
The automatic test procedure is performed in accordance with ISO 8253-1.

Automatic Reflex Test

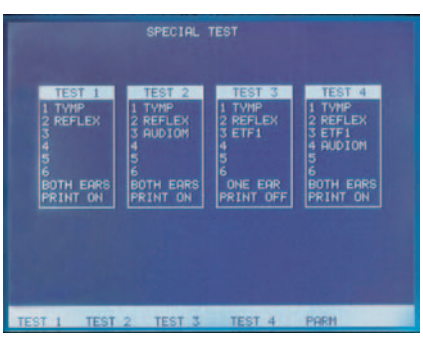
The set-up parameters for the automatic reflex test allow complete freedom in assigning stimuli and intensities for up to 8 reflex tests per ear. In addition to pre-set stimulation levels, a number of test protocol options are available. One of these is particularly suitable for the evaluation of reflex growth as well as for pinpointing the reflex threshold. Each stimulus can be assigned to ipsi- or contralateral presentation as required.



The tympanogram displayed here is non compensated with a 3 ml scaling.



A group of reflexes displayed for easy evaluation of reflex growth.



It is easy to select one of the test sequences that is pre-programmed by the user.

General Technical Specifications

Standards:
Impedance: EN60645-5, ANSI S3.39, type 1.
Audiometer: EN 60645 -1, ANSI S3.6, type 4.
Safety: EN 60601-1, class 1, type B.

Medical CE-mark:
Interacoustics A/S, Assens 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.

Calibration: Impedance: EN60645-5, ANSI S3.39. Audiometer: ISO 389-1. Calibration is performed via the instrument's front panel and is stored in a permanent memory.

Tests:

Tympanometry: Manual or automatic.
Eustachian Tube Test: Manual or automatic. Normal eardrum or perforated eardrum.
Reflexometry: Including decay and latency tests. Automatic or manual. Automatic reflex detection. 16 tests per ear.
Audiometry: Manual or automatic. (Patient controlled Hughson Westlake test according to ISO 8253-1).

Impedance:
Manual or automatic control.
Probe Tone: 226Hz, ± 1% 85 dB SPL ± 1.5 dB.
Harmonic Distortion: Less than 5%.
Air Pressure Control: Manual or automatic.

Pressure Range: -600 to +300 daPa.
Maximum Limits: -800 daPa to +600 daPa.
Pressure Accuracy: 10% or 10 daPa.
Compliance Range: 0.1 to 6.0 ml.
Compliance Accuracy: ± 5% or 0.1 ml.

Frequencies and Maximum Intensities:

Hz	Ipsi dBHL	Contra dBHL	Audiometry dBHL
250	-	90	90
500	110	100	100
1000	110	120	100
2000	110	120	100
3000	100	120	100
4000	100	120	100
6000	-	120	100
8000	-	120	100
WB	110	120	-
HP	110	120	-
LP	110	120	-

Ipsilateral Stimulation:
Frequencies: 500, 1000, 2000, 3000, 4000 Hz.
Noise: Wide Band, High Pass, Low Pass.
Intensities: See table.
Frequency Accuracy: ± 3%.
Harmonic Distortion: Less than 3%.

Contralateral Stimulation:
Frequencies: 250, 500, 1000, 2000, 3000, 4000, 6000 8000 Hz.
Noise: Wide Band, High Pass, Low Pass.
Intensities: See table.
Frequency Accuracy: ± 3%.
Harmonic Distortion: Less than 3%.

Step Size: 5, 2, 1 dB.
Step Accuracy: 0.5 dB.
Compliance Accuracy: +5% or 0.02 ml.

Reflex Decay: Stimulus duration: 10 or 30 seconds.
Stimulus: As above.
Reflex Latency: Manual or in automatic set-up.

Audiometer:
Type 4.
Frequencies: 250, 500, 1000, 2000, 3000, 4000, 6000, 8000 Hz.
Intensities: See table.
Frequency Accuracy: + 3%.
Harmonic Distortion: Less than 3%.
Auto Threshold Determination: Modified Hughson Westlake (according to ISO 8253-1).

Built-in Printer:
Thermal printer. Paper width: 112mm.

Computer Communication:
Built-in RS232C input/output computer interface.

Examples of Compatible Windows Software:
OtoAccess™ database and diagnostic modules.
PrintView for on-line PC monitoring and printing.
NOAH hearing aid fitting software.

Power: 110, 120 V AC 50-60 Hz. Please specify.

Consumption: Max. 60 VA.
Construction: Painted metal cabinet.
Dimensions (LxWxH): 48x40x16 cm.
Weight: 9.5 kg.

Air Freight Packing (LxWxH): 76x55x25 cm.
Gross weight: 14.0 kg.

Included Parts:

HBZ26 Headset
AZ26 Transducer complete
Probe Tube set (2 pcs.)
BET50 Complete set of eartips
Power cable: 110 or 230 V, please specify
PCR-AZ26 Dust cover
3 Rolls of recording paper TPR26
Operation manual CD
Multilingual CE instructions for use

Optional Parts:

APS2 Patient signal
TPR26 Recording paper
AZE Eartips (Mushroom)
ATE Eartips (Parachute)
CAT-40 Calibration unit, 0.2, 0.5, 2, 5 ml
CAT-227 Calibration unit, 0.2, 0.5, 1, 2, 3, 4, 5 ml
IES-2 Impedance ear simulator
IFC59 (25 pins) computer cable
IFC69 (9 pins) computer cable
PrintView software
OtoAccess™ database and diagnostic modules
IA-NOAH-Imp software

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Interacoustics A/S
Phone: +45 6371 3555
Fax: +45 6371 3522
E-mail: info@interacoustics.com
Web: www.interacoustics.com
Mail: Interacoustics A/S
DK-5610 Assens, Denmark

Sales and Service in your area:

Interacoustics®