

# Handheld Portable Tympanometers



## Otowave

- Fast accurate middle ear measurements
- Ergonomic shape
- Totally portable
- Intuitive use
- Large graphics display
- Programmable reflex test
- Optional portable printer and PC interface
- No external power or data cables

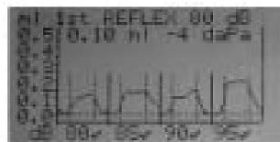
The Maico Otowave is shaped for success in accurate middle ear measurements.

## Ergonomics

Elegantly shaped to follow the contours of a hand and with a perfect weight distribution, tests can be completed with confidence and accuracy.

## Ease of Use

The Otowave is very intuitive to use with on-screen information displayed before, during and after the test. The compliance peak, compliance peak pressure, gradient, ear canal volume and an ipsi lateral reflex test will be measured within seconds. The programmable reflex test can be configured for one frequency (1KHz) for the Otowave 102-1 and four (500, 1KHz, 2KHz and 4KHz) for the Otowave 102-4.



## Tympanometer Measurement

When testing children, very fast, accurate middle ear measurements are essential. The advanced technology within the Otowave makes this requirement possible.

## Acoustic Reflex Measurement

The Maico Otowave provides a comprehensive user-defined reflex measurement facility. This programmable function reflex selection, levels and sensitivity. The large display area facilitates a graphical display of the reflex response and a pass/fail result.

## Recording Results

Results are displayed for review on a large high-resolution graphics display. Results can be:

- Saved within internal memory with a patient identifier
- Printed via an infra-red connection to the optional portable printer
- Transferred to a PC with an IrDA port, NOAH3 database with the optional Maico impedance module

## Portability

Lightweight and weighing just under 1 lb., the Otowave is designed to be a totally portable "go anywhere" instrument which is reliable, accurate and easy to use. The Otowave requires no external power or data cables.

## Standard Accessories

- High speed portable thermal printer
- Calibration cavities
- 4 x 1.5V alkaline 'AA' batteries
- Operating manual
- Set of disposable ear-tips
- Carrying case

## Optional Accessories

- Maico NOAH3 impedance module
- Additional sets of disposable ear-tips

## Technical Specification

### TYMPANOMETRY MEASUREMENTS

Probe tone: 226Hz +/-0.1%, 85dB +/-2dB  
Pressure range: +200daPa to -400daPa +/-10daPa  
Direction of sweep: positive to negative  
Volumetric range: 0.2 to 5ml +/- 0.01ml or 10% over range whichever is greater

Analysis performed: Compliance peak level, compliance peak pressure level, gradient and equivalent ear canal volume.

### REFLEX MEASUREMENTS

Otowave 715: 500Hz, 1KHz, 2KHz & 4KHz +/-0.1%  
Reflex dB range: 85 to 100 dBHL (programmable in 5 or 10 dB steps)  
Reflex measurement range: 0.01ml to 0.5ml +/- 0.01ml  
Analysis performed: Reflex maximum amplitude and pass/fail at each test level.

### DATA MANAGEMENT

#### Internal database

- 30 patient records
- Patient record identification
- Data transfer to designated printer/PC application

#### Printing

Designated printer: MCP8830 high speed portable thermal printer  
Data transfer: Infra-red IrDA 9600 Baud  
Printing may also be completed via a PC with the relevant applications.  
Electronic data storage: database PC requirements

- NOAH3 aud module
- Maico impedance module
- infra-red PC port

#### POWER

Battery specification: 4x Alkaline AA or 4x NiMH (>=2.3Ah) rechargeable

#### DIMENSIONS

Physical dimensions: 210 long x 80 wide x 40mm high envelope.  
Weight (including batteries): less than 1 lb

#### STANDARDS CONFORMITY

The Maico Otowave conforms to the appropriate sections of the following standards; Safety: EN60601-1: 1990

EMC: EN 60601-1-2: 1993

Impedance: EN60645-5:2005 Type 2 tympanometer

CE Mark To Medical Device Directive 93/42/EEC (Annex V).



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