

tymppstar^{pro}TM

MIDDLE-EAR ANALYZER

The **NEW** clinical GSI TymppStar Pro offers a complete range of middle ear testing capabilities that support the needs of hearing healthcare professionals. GSI is known for providing reliable and efficient clinical middle ear solutions to the market. Replacing the world's leading tympanometer (GSI TymppStar), the new TymppStar Pro offers comprehensive clinical options with an intuitive user interface. The TymppStar Pro continues to set the clinical standard in the industry for middle ear analyzers.



Product Features

Familiar Ergonomic Design

The new TymppStar Pro is slimmer in profile and has a smaller footprint. The redesigned control panel provides familiar simple one button test selection while offering new options like examiner and patient selections.

Intuitive Touch Screen

The large color monitor allows the clinician to perform examinations from simple screening to complex evaluations with a simple touch to the monitor.

Probe Shoulder Box Controls

Changing ears and starting tests may be initiated directly from the shoulder box. The sophisticated design of the probe allows for obtaining hermetic seals quickly on any patient.

User Specific Test Protocols

The flexibility of pre-defined protocols saves time and creates consistency in testing methodology. Clinicians have full control over all parameters including the deflection criterion for reflex threshold testing, pump speed, sweep direction, stimulus starting intensity and more when creating customized protocols.

Ease of Importing/ Exporting Data

Complete tympanometric results may be transferred to GSI Suite and Noah[®] 4 providing a simple method of comprehensive and customized reporting.

Simultaneous Multicomponent Tympanometry

All components of tympanometry are collected and saved with each tracing. Detailed interpretation of susceptance (B) and conductance (G) may be achieved on the fly.

Setting The Clinical Standard

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Grason-Stadler



GSI TYMPSTAR PRO™

CLINICAL MIDDLE EAR ANALYZER

Technical Specifications

General Specifications

Size: 16" [41 cm] W x 11" [28 cm] D x 14.5" [37 cm] H

Weight: 12 lb [5.5 kg]

Power Consumption: 60 Watts maximum

Test Types: Tympanometry, Acoustic Reflex Threshold, Reflex Decay, Eustachian Tube Function (Intact and Perforated)

Protocols: Diagnostic, Screening, Multi-component Tympanometry, Auto Sequence and User Defined

Display: Internal Color Touchscreen and optional external HDMI monitor

Interface: USB (keyboard, mouse, Flash Drive, PC communications)

Printout: External Deskjet printer

Probe Tone:

- 226 Hz (85 dB SPL \pm 1.5 dB) 678 Hz (72 dB SPL \pm 1.5 dB) 1000 Hz (69 dB SPL \pm 1.5 dB)
- **Accuracy:** \pm 1%
- **Harmonic Distortion:** Less than 1%

Admittance Measurements

Range: 226 Hz (-10 to + 10 mmho) 678 Hz (-21.0 to +21 mmho) 1000 Hz (-32.0 to +32 mmho)

Sensitivity Scale: Auto Scales to Appropriate Range, Manual selection also possible in Reflex Modes only

Accuracy (226 Hz):

- **Tymp Mode:** \pm 5% of reading or \pm 0.1 mmho, whichever is greater
- **Reflex Mode:** \pm 5% of reading or \pm 0.02 mmho, whichever is greater

Pressure Measurements

(load volume of 0.2 to 7.0 ml)

Range: Normal = +200 to -400 daPa
Wide = +400 to -600 daPa

Accuracy: \pm 10% of reading or \pm 10 daPa, whichever is greater

Sweep Rate: 12.5, 50.0, 200, 600 and 600/200 daPa/sec.

Sweep Accuracy: 10% of nominal rate

Maximum limits (in 0.5cc cavity):
-800 daPa and +600 daPa

Reflex Measurements

Stimuli: 250, 500, 1k, 2k, 4k, BBN, LBN, HBN, Click, External Input, Non-acoustic

Frequency Accuracy: \pm 3%

Harmonic Distortion (THD): Less than 5% (measured acoustically)

Noise Signals: (3 dB bandwidths)

Low Band: 400 -1,600 Hz

High Band: 1,600 -4,000 Hz

Broad Band: 400 -4,000 Hz

Intensity Range: 35 to 120 dB HL

Step Size: 5 dB, 1 dB and 2 dB

Calibration Accuracy: \pm 3 dB

Step Accuracy: \pm 0.5 dB

ON/OFF Ratio: 70 dB minimum

Environmental

Temperature and Humidity Operating Range:

- **Storage:** +32° F [0° C] to +122° F [50° C]
- **Operating:** +59° F [+15° C] to +95° F [+35° C]
- **Transport:** -4° F [-20° C] to +122° F [+50° C]
- **Humidity:** 90% at 95° F [+35° C] (non-condensing)
- **Atmospheric Pressure:** 98 kPa to 104 kPa

Accessories Supplied

Probe Assembly (including contralateral insert phone)

Eartips (1 pkg. each standard, screening)

Calibration Test Cavity, Cleaning kit, Probe Mount Kit (shoulder, clip, wrist band), **User Quick Guide, Reference Instruction Manual**

Quality System

Manufactured, designed, developed and marketed under an ISO 13485 certified quality system

Compliance/Regulatory Standards

Designed, tested and manufactured to meet the following domestic (USA), Canadian, European and International Standards:

UL 60601-1 American Standards for Medical Electrical Equipment

IEC 60601-1, EN 60601-1 International Standards for Medical Electrical Equipment

CSA C22.2 # 601-1-M90

ANSI S3.39, IEC 60645-5, ISO 389

Medical Device Directive (MDD) (ID No.: 0344) to comply with "MDD" 93/42/EEC