



# GSI TYMPSTAR PRO™

## CLINICAL MIDDLE-EAR ANALYZER

### Product Specifications

#### Dimensions and Weight

**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 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 and manual

**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)
- Eartip sample kit
- 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:

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/EC



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Setting The Clinical Standard

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