



# GSI 39™

## AUTO TYMP

### Product Specifications



#### Combo Probe (226 Hz and 1 kHz probe tones)

**Part Numbers:** 1739-9711, 1739-9721, 1739-9731, 1739-9741, 1739-9751

#### Tympanometry and Reflex Modes

##### Probe Tone:

- **Frequency:** 226 Hz +/- 2%
- **Intensity:** 85.5 dB SPL +/- 2.0 dB; measured with an IEC 60318-5 2 cc coupler
- **Harmonic Distortion:** < 3%
- **Frequency:** 1 kHz Hz +/- 2%
- **Intensity:** 75 dB SPL +/- 2.0 dB; measured with an IEC 60318-5 2 cc coupler
- **Harmonic Distortion:** < 3%

**Compliance (226 Hz only):** Range: 0.0 to 1.5 cm<sup>3</sup> and 0.0 to 3.0 cm<sup>3</sup>

*Note: Range is automatically selected based on amplitude of the tympanic peak.*

- **Accuracy:** +/- 5% or +/- 0.1 cm<sup>3</sup>, whichever is greater

**Admittance (1 kHz only):** Range: 0.0 to 5.0 mmho and 0.0 to 10.0 mmho

*Note: Range is automatically selected based on amplitude of the tympanic peak.*

- **Accuracy:** +/- 5% or +/- 0.3 mmho, whichever is greater

**Pressure:** Range: +200 to -400 daPa

- **Accuracy:** +/- 10 daPa or 15%, whichever is greater, measured in 0.5 to 2.0 cc cavities
- **Sweep Rate:** 600 daPa/sec slowing to 200 daPa/sec near tympanic peak - 226 Hz only; 200 daPa/sec - 1 kHz only
- **Sweep Direction:** Positive to negative
- **Gradient:** Tympanic pressure width at 50% of peak compliance (226 Hz only)
- **Test Time:** Approximately 1 second 226 Hz; approximately 3 seconds 1 kHz

##### Reflex (226 Hz probe tone):

- **Frequencies:** 500, 1000, 2000, and 4000 Hz
- **Accuracy:** +/- 3%
- **Total Harmonic Distortion:** <5% (<10% at 110 dB HL)
- **Rise/ Fall Times:** 5 to 10 msec

**Output Levels** (measured with a 2cc coupler):

##### IPSI

- 500 Hz: 80, 90, 100 dB HL, +/- 3 dB
- 1000 and 2000 Hz: 85, 95, 105 dB HL, +/- 3 dB
- 4000 Hz: 80 and 90 dB HL, +/- 3 dB
- Ipsilateral available on versions 1, 2, 3, and 4

##### CONTRA

- 500, 1000, 2000, 4000 Hz: 90, 100, 110 dB HL, +/- 3 dB

*Note 1: Stimuli are time multiplexed with the probe tone (93 ms ON, 66 ms OFF);*

*Note 2: Contra available on versions 2 and 3 only.*

- **Pressure:** Automatically set to pressure at peak compliance with an offset of + or - 20 daPa depending on location of peak compliance
- **Determination of Reflex Present:** Compliance change of 0.05 cm<sup>3</sup> or greater
- **Test Time:** 2 to 12 seconds

##### Reflex (1 kHz probe tone):

- **Frequencies:** 500, 2000, and 4000 Hz
- **Accuracy:** +/- 3%
- **Total Harmonic Distortion:** <5%
- **Rise/Fall Times:** 5 to 10 msec

**Output Levels** (measured with a 2cc coupler):

##### IPSI

- 500 and 4000 Hz: 80, 90 dB HL, +/- 3 dB
- 2000 Hz: 85, 95 dB HL, +/- 3 dB

##### CONTRA

- 500, 2000, 4000 Hz: 90, 100 dB HL, +/- 3 dB

*Note 1: Stimuli are time multiplexed with the probe tone (62 ms ON, 62 ms OFF);*

*Note 2: Contra available on versions 2 and 3 only.*

- **Pressure:** Automatically set to ambient pressure (0 daPa) for all tests
- **Determination of Reflex Present:** Admittance change of 0.1 mmho or greater
- **Test Time:** 2 to 12 seconds



#### GSI 39 Probe – 226 Hz Probe Tone only Tympanometry and Reflex Modes

##### Probe Tone:

- **Frequency:** 226 Hz +/- 2%
- **Intensity:** 85.5 dB SPL +/- 2.0 dB; measured with an IEC 60318-5 2 cc coupler
- **Harmonic Distortion:** < 3%

**Compliance:** Range: 0.0 to 1.5 cm<sup>3</sup> and 0.0 to 3.0 cm<sup>3</sup>

*Note: Range is automatically selected based on amplitude of the tympanic peak.*

- **Accuracy:** +/- 5% or +/- 0.1 cm<sup>3</sup>, whichever is greater

**Pressure:** Range: +200 to -400 daPa

- **Accuracy:** +/- 10 daPa or 15%, whichever is greater, measured in 0.5 to 2.0 cc cavities
- **Sweep Rate:** 600 daPa/sec, except near tympanogram peak where sweep rate slows to 200 daPa/sec to provide better definition of the peak compliance
- **Sweep Direction:** Positive to negative
- **Gradient:** Tympanic pressure width at 50% of peak compliance
- **Test time:** Approximately 1 second

##### Reflex:

- **Frequencies:** 500, 1000, 2000, and 4000 Hz
- **Accuracy:** +/- 3%
- **Total Harmonic Distortion:** <5% (<10% at 110 dB HL)
- **Rise/ Fall Times:** 5 to 10 msec

**Output Levels** (measured with a 2cc coupler):

##### IPSI

- 500 and 4000 Hz: 80, 90, 100 dB HL, +/- 3 dB
- 1000 and 2000 Hz: 85, 95, 105 dB HL, +/- 3 dB

##### CONTRA

- 500, 1000, 2000, 4000 Hz: 90, 100, 110 dB HL, +/- 3 dB

*Note 1: Stimuli are time multiplexed with the probe tone (93 ms ON, 66 ms OFF);*

*Note 2: Contra available on versions 2 and 3 only.*

- **Pressure:** Automatically set to pressure at peak compliance with an offset of + or - 20 daPa depending on location of peak compliance

• **Determination of reflex present:** Compliance change of 0.05 cm<sup>3</sup> or greater

- **Test time:** 2 to 12 second

#### Standards

##### Tympanometry and Reflex Modes

##### Probe Tone:

- ANSI S3.39 1987 Aural Acoustic Impedance/ Admittance (Type 3)
- IEC 60645-5 (2004) Electroacoustics – Audiological Equipment Part 5 Instruments for Measurement of Aural Acoustic Impedance/ Admittance (Type 2)
- ANSI S3.6 (2004) Specifications for Audiometers (Type 4)
- IEC 60645-1 (2002) Electroacoustics – Audiological Equipment – Pure Tone Audiometers (Type 4)
- GL 2005-00014 (ASHA 2005) Guidelines for Manual Pure Tone Threshold Audiometry
- ISO 8253-1 (1989) Acoustics- Audiometric test methods
- UL 60601-1 (2003) Medical Electrical Equipment, Part 1 General Requirements for Safety 2nd Edition
- CAN/ CSA – C22.2 No. 601.1-M90 (2003) Medical Electrical Equipment, Part 1 General Requirements for Safety, Electrical Equipment for Laboratory Use
- IEC/EN 60601-1 Medical Electrical Equipment, Part 1, General Requirements for Safety
- IEC/EN 60601-1-4 Medical Electrical Equipment, Part 1, General Requirements for Safety for Programmable Electronic Medical Systems
- IEC/EN 60601-1-2 (2001) Medical Electrical Equipment, Part 1, Electromagnetic Compatibility

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# GSI 39™

## AUTO TYMP

### Product Specifications *cont.*

#### Standards *continued*

##### Audiometry Mode (Version 3 and 4 only)

**Frequencies:** 125, 250, 500, 750, 1000, 1500, 2000, 3000, 4000, 6000, and 8000 Hz

- **Accuracy:** +/- 2%
- **Total Harmonic Distortion:** < 2.5%
- **Rise/Fall Time:** 20 to 50 msec

##### Intensity Range:

TDH 39 (Standard accessory with versions 3 and 4)

- 125 Hz -10 to 50 dB HL
- 500 to 6000 Hz -10 to 90 dB HL
- 250 and 8000 Hz -10 to 70 dB HL

*Note: an additional 10 dB is available for all frequencies with the +10 dB button.*

EAR 3A/5A (Optional accessory for versions 3 and 4)

- 125 Hz -10 to 40 dB HL
- 500 to 4000 Hz -10 to 80 dB HL
- 6000 Hz -10 to 70 dB HL
- 250 and 8000 Hz -10 to 60 dB HL

*Note: an additional 10 dB is available for all frequencies with the +10 dB button.*

- **Step size:** 5 dB
- **Accuracy:**
  - 125 to 4000 Hz +/- 3 dB
  - 6000 to 8000 Hz +/- 5 dB
- **Signal to noise:** > 70 dB

##### Tone presentation:

- **Continuous:** Steady on when Present bar is depressed
- **Pulsed:** 2.5/ sec ( 200 msec ON, 200 msec OFF)
- **FM (frequency modulated or warble tone):** +/- 5%, 5 Hz

#### Printer

**Internal:** 4 inch thermal printer included with all versions

- **Speed:** 2 audiograms + 2 tympp/reflex (4 frequencies), < 1 minute

**External:** Optional desk jet color printer recognizing PCL3 or PCL3GUI

- 8 1/2" x 11" or A4 format
- Up to 8 Tympp or Tympp/Reflex results per page or up to 8 Audiograms/page

#### Display

240 x 64 graphical, monochrome LCD

#### Power Supply and Power Consumption

- **Universal, auto-ranging power supply:** 100 to 240V +/- 10%; 50 to 60 Hz +/- 5 %; 16 W maximum while printing

#### Environmental

- **Operating Temperature:** 59° F to 104° F
- **Operating Humidity:** 15% to 95%
- **Operating Ambient Pressure Range:** 98 kPa to 104 kPa
- **Storage Temperature:** -93° F to +149° F

#### Mechanical

##### Instrument:

- **Dimensions:** 12.5"(W) x 14.5 "(D) x 4.7"(H);
- **Weight:** 5 lbs - unit and probe

##### Shipping carton:

- **Dimensions:** 19.5"(W) x 22.5"(D) x 8.25"(H);
- **Weight:** 13.1 lbs

#### Supplied Accessories

- Probe Assembly ( Standard - 226 Hz only or Combo - 226 Hz and 1 kHz)
- Power module + power cord
- Test Cavity
- Eartips (probe) 6 sizes, 2 each
- Paper – 3 rolls thermal, 4"
- User Manual
- Quick Reference Guide
- Wall Chart – 226 Hz
- Eartips (contra), 8 sizes, 4 ea.; versions 2 and 3
- Contra Phone; versions 2 and 3
- TDH39 headset; versions 3 and 4
- Eartips (8mm, 25 ea.); Combo probe only
- Probe Shoulder Mount; Combo Probe only
- Probe Cleaning Kit; Combo Probe only

#### Optional Accessories

- Dust Cover ..... 1738-9620
- Carry Case ..... 1738-9680
- Patch Cord (1 ea.)..... 4204-0505
- Patient Response Handswitch ..... 7874-0156
- Audiocups..... 8000-0155

#### Country Kits:

*Order one per instrument at no charge*

- N. America cord, English ..... 1739-9400
- N. America cord, Spanish..... 1739-9401
- N. America cord, Portuguese ..... 1739-9402
- N. America cord, French..... 1739-9403
- Europe Cord, French ..... 1739-9404
- Europe Cord, German ..... 1739-9405
- Europe Cord, Spanish ..... 1739-9406
- Europe Cord, Portuguese..... 1739-9407
- Europe Cord, Russian ..... 1739-9408
- Europe Cord, English ..... 1739-9409
- UK - Ireland Cord, English..... 1739-9410
- Italy Cord, Italian ..... 1739-9411
- Italy Cord, Spanish ..... 1739-9412
- Swiss Cord, German ..... 1739-9413
- Swiss Cord, French ..... 1739-9414
- Swiss Cord, English ..... 1739-9415
- Denmark Cord, English..... 1739-9416
- Israel Cord, English ..... 1739-9417
- S. Africa Cord, English..... 1739-9418
- Australia Cord, English ..... 1739-9419
- Australia Cord, Chinese..... 1739-9420
- Europe Cord, Korean ..... 1739-9421
- N. America Cord, Japanese ..... 1739-9422



*Standard Accessories vary with version selected.*

#### Catalog Listings: GSI 39 Auto Tympp

	Tympp + Ipsi, V.1	Tympp + Ipsi + Contra, V.2	Tympp + Ipsi + Contra + Audio, V.3	Tympp + Ipsi + Audio, V.4	Tympp only, V.5
<b>266 Hz Only</b>					
USA	1739-9710	1739-9720	1739-9730	1739-9740	1739-9750
International	1739-9710INT	1739-9720INT	1739-9730INT	1739-9740INT	1739-9750INT
<b>Combo (266 + 2 kHz)</b>					
USA	1739-9711	1739-9721	1739-9731	1739-9741	1739-9751
International	1739-9711INT	1739-9721INT	1739-9731INT	1739-9741INT	1739-9751INT

Australian Distributer:



Free Call:  
1800 639 263