



AUDIOMETRY TYMPANOMETRY COMBINED



GSI 39

THE PERFECT FIT FOR HEARING SCREENING

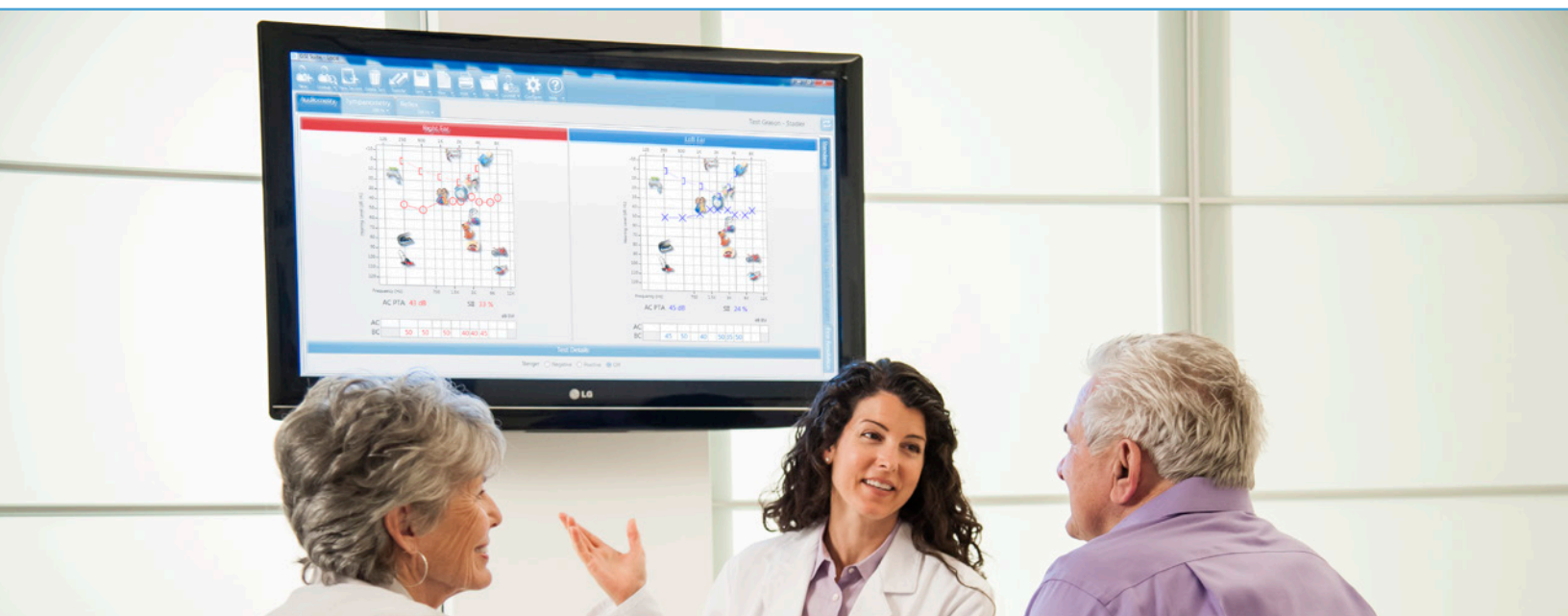
GSI 39 AUDIOMETRY AND TYMPANOMETRY

The GSI 39™ is a flexible screening product for tympanometry, acoustic reflex measurements, and audiometry to meet your testing needs today and in the future. The GSI 39 is available in five different versions. Choose your needed features today and upgrade your device with additional features as your needs change in the future.



GSI SUITE OFFERS REPORTING AND COUNSELING

With one button press, test results are transferred from the GSI 39 to GSI Suite software where audiometric, tympanometric, and OAE test results may be combined into a single comprehensive report. Counseling overlays such as the speech banana or hearing loss levels assist the clinician with explaining the results to the patient and family members.





KEY DEVICE FEATURES

MULTIPLE PROBE TONES

Probe tones of 226 Hz and 1000 Hz are available. Normative ranges for middle ear pressure and admittance are included.

SCREENING AUDIOMETRY

Air conduction screening from 125 to 8000 Hz. Steady, Pulsed, and FM provide a variety of interesting test stimuli to accommodate all screening environments.

5 AVAILABLE VERSIONS

Flexible options that include tympanometry at 226 Hz, 1000 Hz, ipsilateral and contralateral reflex screening, and audiometry in any combination.

IPSI AND CONTRA REFLEX SCREENING

Quickly screen for the presence of ipsilateral or contralateral acoustic reflexes at up to four frequencies.

STAND-ALONE AND PC ENABLED

Have the reliability of a stand-alone device with the ability to be EMR/EHR compatible. A single button press transfers tympanometric and audiologic data for advanced reporting options.

PRINTING OPTIONS

Use the on-board printer or connect to GSI Suite to print results.



3 KEY

BENEFITS



MULTIPLE CONFIGURATIONS

Accommodate a variety of testing needs with five versions. Combine tympanometry, ipsi and contra reflex screening, and screening audiometry to quickly assess middle ear function, neural integrity, and hearing level in patients of all ages.



RELIABILITY YOU CAN TRUST

GSI has a history of manufacturing products that are designed for durability. Enjoy the flexibility of a portable, stand-alone device with an internal printer or connect to a PC for seamless EMR/EHR transfer.



TESTING TAKES SECONDS

As soon as the probe tip obtains a seal in the ear canal, the tympanogram will automatically begin. Pressure sweep is 600/200 daPa per second, which provides a fast and accurate picture of the middle ear function.

AUDIOMETRY AND TYMPANOMETRY COMBINED

TECHNICAL SPECIFICATIONS

DIMENSIONS AND WEIGHT

W x D x H: 12.5 in x 14.5 in x 4.7 in
(31.75 cm x 36.83 cm x 11.94 cm)

Weight: 5 lb – unit and probe (2.27 kg)

Shipping W x D x H: 19.5 in x 22.5 in x 8.25 in
(49.53 cm x 8.86 cm x 20.96 cm)

Shipping Weight: 13.1 lb (5.94 kg)

GS1 39 PROBE – 226 HZ PROBE TONE ONLY

TYMPANOMETRY AND REFLEX MODES

PROBE TONE

Frequency: 226 Hz \pm 2%

Intensity: 85.5 dB SPL \pm 2.0 dB

Harmonic Distortion: < 3%

COMPLIANCE

Range: 0.0 to 1.5 cm³ and 0.0 to 3.0 cm³

Accuracy: \pm 5% or \pm 0.1 cm³, whichever is greater

PRESSURE

Range: +200 to -400 daPa

Accuracy: \pm 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: Tympanometry pressure width at 50% of peak compliance

Test Time: Approximately 1 second

REFLEX

Frequencies: 500, 1000, 2000, and 4000 Hz

Accuracy: \pm 3%

Total Harmonic Distortion: < 5% (< 10% at 110 dB HL)

Rise/ Fall Times: 5 to 10 msec

Output Levels: 80 - 110 dB HL

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

Test Time: 2 to 12 seconds

COMBO PROBE – 226 HZ AND 1 KHZ PROBE TONES

TYMPANOMETRY AND REFLEX MODES

226 HZ PROBE TONE

Frequency: 226 Hz, 1000 Hz \pm 2%

Intensity: 85.5 dB SPL \pm 2.0 dB

Harmonic Distortion: < 3%

1 KHZ PROBE TONE

Frequency: 1 kHz \pm 2%

Intensity: 75 dB SPL \pm 2.0 dB

Harmonic Distortion: < 3%

COMPLIANCE (226 HZ)

Range: 0.0 to 1.5 cm³ and 0.0 to 3.0 cm³

Accuracy: \pm 5% or \pm 0.1 cm³, whichever is greater

ADMITTANCE (1 KHZ ONLY)

Range: 0.0 to 5.0 mmho and 0.0 to 10.0 mmho

Accuracy: \pm 5% or \pm 0.3 mmho, whichever is greater

PRESSURE

Range: +200 to -400 daPa

Accuracy: \pm 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 tympan peak - 226 Hz only; 200 daPa/sec - 1 kHz only

Sweep Direction: Positive to negative

Gradient: Tympanometry pressure width at 50% of peak compliance (226 Hz only)

Test Time: 1 to 3 seconds

REFLEX (226 HZ PROBE TONE)

Frequencies: 500, 1000, 2000, and 4000 Hz

Accuracy: \pm 3%

Total Harmonic Distortion: <5% (<10% at 110 dB HL)

Rise/Fall Times: 5 to 10 msec

Output Levels: 80-110 dB HL

Step Size: 10 dB

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

Test Time: 2 to 12 seconds

REFLEX (1 KHZ PROBE TONE)

Frequencies: 500, 2000, and 4000 Hz

Accuracy: \pm 3%

Total Harmonic Distortion: <5%

Rise/Fall Times: 5 to 10 msec

Output Levels: 80-100 dB HL

Step Size: 10 dB

Pressure: Automatically set to ambient pressure (0 daPa) for all tests

AUDIOMETRY MODE

FREQUENCIES

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

Accuracy: \pm 2%

Total Harmonic Distortion: < 2.5%

Rise/Fall Time: 20 to 50 msec

HEARING LEVEL RANGE

Air Conduction: -10 to 100 dB HL

Step size: 5 dB

Accuracy:

• 125 to 4000 Hz \pm 3 dB

• 6000 to 8000 Hz \pm 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): \pm 5%, 5 Hz

PRINTER

4 inch thermal printer

Speed: 2 audiograms + 2 tymp/reflex (4 frequencies), < 1 minute

DISPLAY

240 x 64 graphical, monochrome LCD

STANDARD 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

DD 45 headset; versions 3 and 4

Eartips (8mm, 25 ea.); combo probe only

Probe shoulder mount; combo probe only

Probe cleaning kit; combo probe only

GSI Suite

ENVIRONMENTAL

Operating Temperature: +59° F (15° C) to +104° F (40° C)

Storage Temperature: -93° F (-69° C) to +149° F (65° C)

Operating Humidity: 15% to 95%

Operating Ambient Pressure: 98 kPa to 104 kPa

POWER

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

QUALITY SYSTEM

Manufactured, designed, developed and marketed under ISO 13485 certified quality systems.

COMPLIANCE

TYMPANOMETRY AND REFLEX MODES

PROBE TONE

• IEC/EN 60601-1 Medical Electrical Equipment Requirements for Safety

• CSA C22.2 No.601-1-M90

• ANSI S3.39 Aural Acoustic Impedance Admittance (Type 3)

• IEC 60645-5 Aural Acoustic Impedance/ Admittance (Type 3)

• ANSI S3.6 Audiometers (Type 4)

• IEC 60645-1 Pure Tone Audiometers (Type 4) Specifications for Audiometers (Type 4)

• PTB Certificate No. 15.11-94/53 Pure Tone Audiometers (Type 4)

• GL2005-00014 Guidelines for Manual Pure-Tone Threshold Audiometry