



GSI PELLO™

ADAPTABLE MID-LEVEL AUDIOMETER



Setting The Clinical Standard

 **gsi**
Grason-Stadler



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Meets Your Needs Now and Into the Future

The GSI Pello™ is a versatile audiometer that fits your needs now and into the future. Familiar in design, the Pello has many of the features you expect from Grason-Stadler. The Pello can perform the standard audiometric battery and depending on the configuration, additional tests such as the TEN Test, QuickSIN and High Frequency audiometry. Portable, stand-alone, or PC enabled, the Pello is a perfect solution for a growing practice.



Robust Features

- ✓ Air, Bone and Speech Audiometry
- ✓ Integrated standard word lists
- ✓ Test Type buttons for efficient transitions
- ✓ Color display with familiar ergonomic design
- ✓ Noah® 4 compatible with GSI Suite software
- ✓ Portable/Stand-alone/PC enabled
- ✓ Upgradable for future needs



Standard Configuration

The standard configuration includes air conduction, bone conduction and speech audiometry. Integrated word lists provide the convenience of presenting recorded speech stimuli without the use of external CD players or other devices.



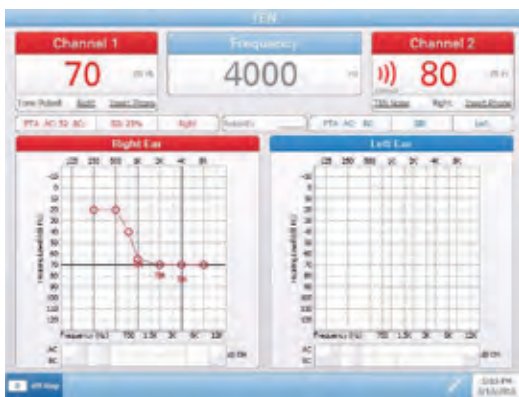
Speech Plus Configuration

Speech Plus adds the benefit of automatic scoring and playing options, as well as advanced speech tests. Evaluate speech-in-noise quickly and accurately using the QuickSIN and the BKB-SIN. AZ Bio and AZ Bio Pediatric sentence tests assist in cochlear implant evaluations. Audiologists can expand patient services and seamlessly add value to audiological evaluations by performing speech-in-noise tests.



High Frequency Configuration

High Frequency testing is essential when monitoring patients taking ototoxic medications. Tinnitus evaluations are enhanced when pitch-matching is performed using Fine Hz resolution. The circumaural headphones are conveniently calibrated for the full frequency range of 125-20,000 Hz. Add the high frequency option when your referrals increase.



Special Tests Configuration

The Special Test configuration combines a variety of traditional audiometric tests with the latest tests and test stimuli. Classic tests of Tone Decay, SISI and ABLB are included. Pediatric Noise, a new frequency specific stimulus, is paired with remote operation of the Pello using keyboard short-cuts. Both are invaluable tools when seeing pediatric patients. Implement the TEN test to identify cochlear dead regions to assist in counseling and hearing aid fittings.



GSI Suite Offers Reporting and Counseling Tools

With a single button press, data is transferred from the instrument to the Suite software where it is stored or a report may be generated. Audiometric, tympanometric and OAE test results may be combined into customized report templates.

Counseling overlays assist the clinician with explaining results of the hearing evaluation with helpful visual aids. Select from 4 options: phonemes, speech banana, common sounds and hearing loss level.



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Customization at Your Fingertips

Customize default settings with the configuration application. Predefine a test flow by setting your preferences. Organize over 50 included word lists into a “favorites” list for easy access. Create and manage a list of user names with optional associated passwords for additional data security.

Adaptable to Your Needs

The standard Pello audiometer may be upgraded in the future, adding new features and tests as your referral sources grow. Choose from 3 additional configurations; Speech Plus, High Frequency and/or Special Tests.



Efficiency You Can Appreciate

GSI is recognized worldwide as the most user-friendly front panel design in audiometry. Quickly transition between test types with the one-button one-function front panel design.



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Technical Specifications

Dimensions and Weight

Screening and Diagnostic Testing

W x D x H: 14.8 inches x 10.5 inches x 13.8 inches (LCD raised) [37.5 cm x 26.7 cm x 35.1 cm]

Height with LCD Lowered: 4.0 inches [10.2 cm]

Weight: 8.18 pounds [3.6 kg]

Shipping Weight: 20 pounds [9.1 kg]

Power Specifications

Power Consumption: 90 Watts

Voltage & Amperage: 100-240 VAC, 0.5 A max

Frequency: 50 Hz and 60 Hz

Channels - 1.5

Pure Tone

FREQUENCY RANGE

Air Conduction: 125-8000 Hz

High Frequency*: 8,000 Hz to 20,000 Hz (8 kHz, 9 kHz, 10 kHz, 11.2 kHz, 12.5 kHz, 14 kHz, 16 kHz, 18 kHz*** and 20 kHz***)

Full Frequency Range*: 125 Hz to 20,000 Hz

Bone Conduction: 250 Hz to 8,000 Hz

Sound Field*: 125 to 12,500 Hz

Paired Inserts: 125 Hz to 8,000 Hz

Frequency Accuracy: ± 1 %

Total Harmonic Distortion: < 2% (earphones and paired insert phones*) < 5% (bone vibrator)

HEARING LEVEL RANGE**

Air Conduction: -10 dB HL to 120 dB HL

High Frequency*: -10 dB HL to 100 dB HL

Bone Conduction (B81):

-10 dB HL to 90 dB HL (mastoid)

-10 dB HL to 80 dB HL (forehead)

Sound Field:

-10 dBHL to 90 dBHL (amplified speakers)

-10 dBHL to 102 dBHL (external amplifier and high performance speakers)

Paired Inserts: -10 dB HL to 120 dB HL

Masking Intensity Range (Calibrated in effective masking) Narrow Band Noise:

Maximum dB HL is 15 dB below tone

SIGNAL FORMAT

Steady: Tone continuously present

Pulsed: Tone pulsed 200 msec ON, 200 msec OFF

FM: Modulation Rate: 5 Hz

Modulation depth +/- 5%

Pediatric Noise*: Continuously presented or pulsed

Speech

Microphone: For live voice testing and communications

INT/EXT A & INT/EXT B: Can be utilized for internal wave files or recorded speech material from an external device

HEARING LEVEL RANGE

Air Conduction: -10 dB HL to 100 dB HL

Bone Conduction:

-10 dB HL to 60 dB HL (mastoid)

-10 dB HL to 50 dB HL (forehead)

Sound Field*: -10 dB HL to 90 dB HL (amplified speakers)

Paired Inserts: -10 dB HL to 95 dB HL

SPEECH NOISE

Air Conduction: -10 dB HL to 95 dB HL

Bone Conduction:

-10 dB HL to 50 dB HL (mastoid)

-10 dB HL to 40 dB HL (forehead)

Sound Field: -10 dB HL to 85 dB HL

WHITE NOISE

Air Conduction: -10 dB HL to 95 dB HL

Bone Conduction:

-10 dB HL to 60 dB HL (mastoid)

-10 dB HL to 50 dB HL (forehead)

Sound Field: -10 dB HL to 80 dB HL

Special Tests*

ALT (ABLBI): Tone alternating between Channel 1 and Channel 2: Channel 1 is 400 msec ON, 400 msec OFF followed by Channel 2, 400 msec ON, 400 msec OFF.

SISI: An intensity increment is added to a tone in the selected channel for 200 msec, every 5 seconds. The HL increments are in 1, 2 or 5 dB.

High Frequency: Pure tone testing in the frequency range of 8,000 Hz to 20,000 Hz using circumaural headphones.

TEN: TEN masking noise will be presented to the test ear. Pure tone stimuli between 500 and 4000 Hz may be used at 1, 2, or 5 dB increments to obtain TEN thresholds.

QuickSIN: Six (6) sentences with five (5) key words per sentence are presented in four-talker babble noise. The sentences are presented at prerecorded signal-to-noise ratios. The SNR's used are 25, 20, 15, 10, 5 and 0.

BKB-SIN: 18 List Pairs. The sentences are presented at prerecorded signal-to-noise ratios that decrease in 3-dB steps. Each list in the pair is individually scored, and the results of the two lists are averages to obtain the List Pair score. Results are compared to normative data to obtain the SNR Loss.

Tone Decay: Presents a continuous pure tone with timer.

Special Tests (User Defined)

Lombard test

Pure Tone Stenger

Speech Stenger

SAL

Communications and Monitoring

Talk Forward: Permits the tester to speak through the test microphone into the selected transducer at approximately the intensity level set by the front panel controls.

Talk Back: Allows the tester to listen to comments from the patient in the testing booth.

Monitor: The monitor headset can be used by the tester to listen to Channel 1, Channel 2, and/or Talk Back signals.

Environmental Requirements

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

Relative Humidity: 10% to 95% (non-condensing)

Ambient Pressure Range: 98 kPa to 104 kPa

Background Sound Level: <35 dB(A)

Storage Temperature: 0°C to + 50°C (32°F to 122°F)

Transport Temperature: -20°C to + 50°C (-4°F to 122°F)

Quality System

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

Compliance/Regulatory Standards

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

ANSI S3.6, IEC 60645-1, IEC 60645-2, ISO 389

ANSI/AAMIES 60601-1 Medical Electrical Equipment: General Requirement for Safety

IEC/EN 60601-1 International Standards for Medical Electrical Equipment: General Requirement for Safety

CSA C22.2 # 601-1-M90

Medical Device Directive (MDD) to comply with EC Directive 93/42/EEC

Notes:

* *Optional configuration*

** *The maximum HL values are applicable to the middle frequencies only*

*** *RETSPL values interpolated*