

# pello™

## Introducing GSI Pello™ Audiometer

The GSI Pello is a new, versatile audiometer from Grason-Stadler that fits your needs now and in 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, Quick SIN and High Frequency audiometry. Portable or stand alone, the Pello is ideal for audiology private practices, hearing aid dispensers, ENT offices and satellite clinics.



## Product Features

- Air, Bone and Speech Audiometry
- Insert phones and headphones included
- 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

## Customizable Options to Grow with You

1 Standard	2 Speech Plus	3 Special Test	4 High Frequency
<ul style="list-style-type: none"> <li>✓ Air</li> <li>✓ Bone</li> <li>✓ Speech</li> <li>✓ Integrated Word Lists</li> </ul>	<ul style="list-style-type: none"> <li>✓ Autoscore</li> <li>✓ Autoplay</li> <li>✓ BKB-SIN</li> <li>✓ QuickSIN</li> <li>✓ AZ Bio</li> </ul>	<ul style="list-style-type: none"> <li>✓ TEN</li> <li>✓ ABLB/SISI</li> <li>✓ Tone Decay</li> <li>✓ Pediatric Noise</li> <li>✓ Remote Keyboard</li> </ul>	<ul style="list-style-type: none"> <li>✓ High Hz Headphones</li> <li>✓ Test up to 20 kHz</li> <li>✓ Fine Hz Solutions</li> <li>✓ 1 Hz Steps</li> </ul>

Setting The Clinical Standard

[www.grason-stadler.com](http://www.grason-stadler.com)

Grason-Stadler, 10395 West 70th Street, Eden Prairie, Minnesota 55344  
800-700-2282 • 952-278-4402 • fax 952-278-4401 • e-mail [info@grason-stadler.com](mailto:info@grason-stadler.com)





# GSI PELLO™

## AUDIOMETER

### 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 digital 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 (ABLB):** 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 circum-aural 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*