



# Harp Basic - Plus

ADVANCED DIAGNOSTIC AUDIOMETER

## DESCRIPTION

Harp is an advanced diagnostic audiometer, capable of performing fast and accurate air, bone and speech audiometric exams, as well as several additional tests. Top-level features combined with ease of use and portability make Harp the ideal choice for a wide range of users.

## CLASSIFICATION

IEC 60645-1: Type 2 Class A/AE  
ANSI S3.6: Type 2A/2AE

## AVAILABLE SIGNALS

Stimulus: pure tone, warble tone  
2 external inputs for speech audiometry  
MIC input for live speech audiometry  
Internal input (flash memory) for speech audiometry (Harp Plus only)  
Masking: NBN, WN, SN

## SIGNALS SPECIFICATION

Attenuator step: 1 and 5 dB  
Presentation: Continuous, Pulsed (0.5, 1 and 2 Hz)  
Warble: 5 Hz sin wave modulating signal

## AVAILABLE OUTPUTS AND TRANSDUCERS

AC: TDH-39 / DD45 headphones, ER-3 / IP30 insert earphones  
BC: B-71 bone vibrator  
Free field  
Insert masking earphone: IME-100

## AVAILABLE TESTS

- Pure Tone audiometry
- Auto threshold (modified Hughson-Westlake)
- Speech audiometry (2 channels)
- ABLB
- SISI: automatic score; 1 dB increment (5 dB for familiarization)
- Stenger, with pure tone or speech stimulation
- Tone decay, with 60 or 120 sec. duration
- DLI, with increments between 0 and 5 dB
- 2 independent channels Master Hearing Aid

Only on Harp Plus:

- TEN test (optional)
- QuickSIN® test (optional)

## PURE TONE: FREQUENCIES AND MAXIMUM LEVELS (dB HL)

| Freq. (Hz) | AC TDH-39 DD45 | AC ER-3 IP30 | AC ER-5(*) | BC | FF (**) |
|------------|----------------|--------------|------------|----|---------|
| 125        | 80             | 90           | 90         | -  | 75      |
| 250        | 100            | 105          | 100        | 45 | 85      |
| 500        | 110            | 110          | 110        | 65 | 95      |
| 750        | 115            | 115          | 120        | 70 | 95      |
| 1.000      | 120            | 120          | 120        | 75 | 95      |
| 1.500      | 120            | 120          | 120        | 80 | 95      |
| 2.000      | 120            | 120          | 115        | 80 | 95      |
| 3.000      | 120            | 120          | 115        | 75 | 95      |

|       |     |     |     |    |    |
|-------|-----|-----|-----|----|----|
| 4.000 | 120 | 110 | 110 | 75 | 95 |
| 6.000 | 105 | 95  | 100 | 55 | 90 |
| 8.000 | 95  | 90  | 90  | 50 | 85 |

(\*) Transducer supported but no more available for purchasing  
(\*) The values refer to "normal" range; add 10 dB to each value in case of "extended range" option selected

## SPEECH AUDIOMETRY: MAXIMUM LEVELS (dB HL)

| AC (*) TDH-39 DD45 | AC ER-3 IP30 | AC ER-5 | BC | FF                         |
|--------------------|--------------|---------|----|----------------------------|
| 100                | 100          | 100     | 60 | Normal: 75<br>Extended: 85 |

(\*) Reduce by 20dB in case of free field equivalent filter activation.

## PATIENT – OPERATOR COMMUNICATION

Talk over: built-in or external microphone  
Talk back: through built-in speaker or monitor headset (included); patient microphone included  
Patient response trigger

## MONITOR SIGNAL

Both channels monitored through the built-in speaker or monitor headset (included)

## INTERNAL FLASH MEMORY (only Harp Plus)

Used to store the speech material (.wav format)  
Capacity: 4 GB (more than 6 hours of speech)  
Speech material upload: through ATIT software (incl.)

## PRINTER

Optional integrated thermal printer  
Paper size: 112 mm

## INTERNAL DATABASE

Up to 100 patients both AC and BC thresholds (only pure tone exams)

## CALIBRATION

Validity: 12 months  
All the parameters set through the device software

## COMPUTER INTERFACE

Connection: USB (driverless)  
Compatible software: Inventis Maestro

## HYBRID TECHNOLOGY

Description: Harp can be controlled either as a stand-alone or as a PC-controlled audiometer  
It requires Inventis Maestro software

## DISPLAY

Live display of the graph of all the tests  
Type: Graphical colour TFT LCD  
Size: diagonal 4.3", 95 mm x 54 mm  
Resolution: 480 x 272

## POWER SUPPLY

Without integrated printer:  
Main unit: 6V, 1.67A

External adapter: 100-240Vac 50/60 Hz 0.3-0.1A medical grade responding to IEC 60601-1 standard

*With integrated printer:*

Main Unit: 6Vdc, 3.2A

External adapter: 100-240 Vac 50/60 Hz 0.9-0.34A medical grade, responding to IEC 60601-1 standard

### MECHANICS

*Without integrated printer:*

Size (WxDxH): 32 x 32 x 9 cm / 12.6 x 12.6 x 3.5 in

Weight: 1.8 Kg / 4.0 lbs

*With integrated printer:*

Size (WxDxH): 32 x 39 x 9 cm / 12.6 x 15.4 x 3.5 in

Weight: 2.3 Kg / 5.0 lbs

### FREIGHT PACKING

Size (WxDxH): 47 x 40 x 35 cm / 18.5 x 15.8 x 13.8 in

Gross weight (without printer): 4.2 Kg / 9.3 lbs

Gross weight (with printer): 4.7 Kg / 10.4 lbs

### APPLICABLE STANDARDS

Pure tone audiometry: IEC 60645-1, ANSI S3.6

Speech audiometry: IEC 60645-1, ANSI S3.6

Calibration: ISO 389-1 (TDH 39 and DD45), ISO 389-2 (ER-3, IP30, ER-5), ISO 389-3 (B71), ISO 389-7 (FF)

Electrical safety: IEC 60601-1, Class I type BF

EMC: IEC 60601-1-2

### CE CERTIFICATE

MDR 2017/745/EU Classification: Class IIa

Classification rule (Annex VIII, 2017/745): 10

Notified body: TÜV SÜD Product Service GmbH (0123)

### PRODUCT CODES

10145: Harp model Basic – Diagnostic audiometer

10162: Harp model Basic – Diagnostic audiometer – with integrated thermal printer

10146 Harp model Plus – Diagnostic audiometer

10163: Harp model Plus – Diagnostic audiometer – with integrated thermal printer

### INCLUDED PARTS

- TDH-39 or DD45 supra-aural headphones
- B71 bone vibrator
- Patient response switch
- Monitor headset with boom microphone
- Clip-on microphone for patient-to-operator communication
- Plastic cover sheet
- Medical grade power supply
- USB connection cable
- User manual

### OPTIONAL PARTS (with order code)

- 10833: ER-3C insert earphones
- 11748: IP30 insert earphones
- 10177: IME-100 insert masking earphone
- 10181: Desktop, battery operated microphone for live speech tests
- 10179: Amplivox Audiocups noise excluding enclosures for TDH-39 / DD45 headphones
- 10180: Cable set for sound booth
- 10182: Soft carrying case
- 10293: Thermal paper for Harp and Piano audiometers (box of 5)

- 12307: One active speaker FBT CANTO 5CA
- 10534: TEN test license
- 10533: QuickSIN® test license

Harp is developed by:

#### INVENTIS S.r.l.

CORSO STATI UNITI, 1/3

35127 PADOVA – ITALY

PHONE: +39.049.8962 844

FAX: +39.049.8966 343

info@inventis.it

www.inventis.it

Follow us on LinkedIn

<https://www.linkedin.com/company/inventis-srl>

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