



# Viola Basic - Plus

COMBO UNIT: MIDDLE EAR ANALYZER / AUDIOMETER



## CLASSIFICATION

EN 60645-5 / ANSI S3.39: Type 2 middle ear analyzer  
EN 60645-1 / ANSI S3.6: Type 3 pure tone audiometer

## AVAILABLE TESTS

- Tympanometry (automatic)
- Acoustic Reflex Threshold (automatic)
- 2 Automatic test sequences (tympanometry + reflex test)
- Pure Tone Audiometry

Only Viola Plus

- Acoustic Reflex Decay
- Speech Audiometry
- QuickSIN® test (optional)

## MIDDLE EAR ANALYZER SPECIFICATIONS

### PROBE TONE

Frequency: 226 Hz  
Level: 85 dB SPL (@ 226 Hz)

### COMPLIANCE MEASUREMENT SYSTEM

Volume range: .0.2 ÷ 8.0 ml (@ 226 Hz)

### PRESSURE SYSTEM

Rotary type pump with endless flow

### TYMPANOMETRY

Viewing mode: absolute or compensated

Single scan

User selectable pressure range

Maximum range: -600 to +400 daPa

Safety limits: -800 daPa and +600 daPa

Available rates: 50, 100, 200, 300 daPa/sec and AUTO (100-300 daPa/sec)

Auto start feature

### ACOUSTIC REFLEX TEST

Ipsilateral and contralateral stimulation

Stimulus ON-Time: selectable from 0.5s to 2.5s

Stimulus OFF-Time: selectable from 0.5s to 2.5s

Three different tests available:

- Automatic threshold
- Fixed intensity
- Growing intensity

### ACOUSTIC REFLEX DECAY TEST

Ipsilateral and contralateral stimulation

Test duration: 10 sec or 20 sec (selectable)

### QUICK TESTS

Two user programmable Quick tests available

Each test consists of a sequence of

- Tympanometry
- Reflex test (Fixed intensity or Automatic threshold, with user defined parameters)

## AVAILABLE STIMULI AND MAXIMUM LEVELS

Attenuator step: 5 dB

Stimulus	IPSI (dB HL)	CONTRA TDH39 headphone (dB HL)	CONTRA IME-100 earphone (dB HL)
250 Hz	-	100	-
500 Hz	100	120	110
1,000 Hz	110	120	115
2,000 Hz	105	120	110
4,000 Hz	100	120	110

## AUDIOMETER SPECIFICATIONS

### AVAILABLE SIGNALS

Stimulus: pure tone, warble tone

Masking: NBN, WN, SN

Only Viola Plus

2 external inputs for speech audiometry

MIC input for live speech audiometry

Internal input (flash memory) for speech audiometry

### 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, ER-3A / ER-5A insert earphones

BC: B-71 bone vibrator

Insert masking earphone: IME-100

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

Freq. (Hz)	AC TDH-39	AC ER-3A	AC ER-5A	BC
125	80	90	90	-
250	100	105	100	45
500	110	110	110	65
750	115	115	120	70
1.000	120	120	120	75
1.500	120	120	120	80
2.000	120	120	115	80
3.000	120	120	115	75
4.000	120	110	110	75
6.000	105	95	100	55
8.000	95	90	90	50

**SPEECH AUDIOMETRY: MAXIMUM LEVELS (dB HL)**

AC TDH-39	AC ER-3A	AC ER-5A	BC
100	100	100	55

**PATIENT – OPERATOR COMMUNICATION**

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

**MONITOR SIGNAL (only Viola Plus)**

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

**PRINTER**

Optional integrated thermal printer  
 Paper size: 112 mm

**CALIBRATION**

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

**COMPUTER INTERFACE**

Connection: USB (driverless)  
 Compatible software: Inventis Daisy with Maestro module  
 Noah with Noah Maestro module

**DISPLAY**

Type: Graphical color TFT LCD  
 Size: diagonal 4.3", 95 mm x 54 mm  
 Resolution: 480 x 272

**POWER SUPPLY**

*Without integrated printer:*  
 Maximum consumption: 9 Watts  
 Power supply: 6V, 2A cont., through an external medical grade 100-240 Vac 50/60 Hz power supply

*With integrated printer:*  
 Maximum consumption: 25 Watts  
 Power supply: 6V, 6A cont., through an external medical grade 100-240 Vac 50/60 Hz power supply

**MECHANICS**

*Without integrated printer:*  
 Size (WxDxH): 32 x 32 x 9 cm / 12.6 x 12.6 x 3.5 in  
 Weight: 1.9 Kg / 4.19 lbs

*With integrated printer:*  
 Size (WxDxH): 32 x 39 x 9 cm / 12.6 x 15.4 x 3.5 in  
 Weight: 2.4 Kg / 5.29 lbs

**FREIGHT PACKING**

Size (WxDxH): 47 x 42 x 35 cm / 18.5 x 15.8 x 13.8 in  
 Gross weight (without printer): 4.3 Kg / 9.48 lbs  
 Gross weight (with printer): 4.8 Kg / 10.58 lbs

**APPLICABLE STANDARDS**

Impedance: EN 60645-5 / ANSI S3.39, Type 2  
 Pure tone audiometry: EN 60645-1 / ANSI S3.6, Type 3  
 Calibration: EN ISO 389-2 (IPSI), EN ISO 389-1 (CONTRA TDH 39) EN ISO 389-2 (CONTRA IME-100)  
 Electrical safety: EN 60601-1  
 EMC: EN 60601-1-2

**CE CERTIFICATE**

93/42/EEC classification: Class IIa  
 Classification rule (Annex IX, 93/42/EEC): 10  
 Notified body: TÜV SÜD Product Service GmbH (0123)  
 Number of CE certificate: G1 12 09 65346 006

**PRODUCT CODES**

10343: Viola Basic  
 10344: Viola Basic – with integrated thermal printer  
 10374: Viola Plus  
 10375: Viola Plus – with integrated thermal printer

**INCLUDED PARTS**

- Control box with probe
- Single TDH-39 contralateral headset
- Calibration cavities
- Assorted ear tips box
- TDH-39 supra-aural headphones
- B71 bone vibrator
- Patient response switch
- Monitor headset with boom microphone (Viola Plus only)
- Clip-on microphone for patient-to-operator communication (Viola Plus only)
- Plastic cover sheet
- Medical grade power supply
- USB connection cable
- User manual
- Inventis software suite CD

**OPTIONAL ACCESSORIES (with order code)**

- 10342: IME-100 Insert earphone for contra reflex testing
- 10166: ER-3A insert earphones
- 10172: ER-5A insert earphones
- 10181: Desktop, battery operated microphone for live speech tests
- 10179: Amplivox Audiocups noise excluding enclosures for TDH-39 headphones
- 10180: Cable set for sound booth
- 10182: Soft carrying case
- 10541: Trolley for audiometers / tympanometers
- 10533: QuickSIN® test license
- 10293: Thermal paper for printer (box of 5)

**DISPOSABLES (with order code)**

- 10488: White tips (diam. 6 mm) – Set of 30
- 10489: Pink tips (diam. 7 mm) – Set of 30
- 10490: Violet tips (diam. 8 mm) – Set of 30
- 10491: Green tips (diam. 10 mm) – Set of 30
- 10492: Red tips (diam. 12 mm) – Set of 30
- 10493: Blue tips (diam. 14 mm) – Set of 30
- 10494: Orange tips (diam. 16 mm) – Set of 30
- 10495: Light blue tips (diam. 18 mm) – Set of 30

- 10496: Yellow tips (diam. 21 mm) – Set of 30
- 10511: Box with assorted tips – Set of 160
- 10554: Cleaning brushes for the tympanometers probe

**SUMMARY**

	<b>Viola Basic</b>	<b>Viola Plus</b>
Automatic tympanometry	✓	✓
Reflex test		
<i>Fixed intensity</i>	✓	✓
<i>Growing intensity</i>	✓	✓
<i>Automatic threshold</i>	✓	✓
Acoustic reflex decay	-	✓
Quick tests (tymp. + reflex seq.)	✓	✓
Probe tones	226 Hz	226 Hz
Pure Tone audiometry	✓	✓
Speech audiometry	-	✓

Viola is developed by:

**INVENTIS s.r.l.**

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