



Viola Basic - Plus

COMBO UNIT: MIDDLE EAR ANALYZER / AUDIOMETER



CLASSIFICATION

IEC 60645-5 / ANSI S3.39: Type 2 middle ear analyzer
 IEC 60645-1: Type 3 audiometer (Viola Basic), Type 3B/BE audiometer (Viola Plus)
 ANSI S3.6: Type 3 audiometer (Viola Basic), Type 3C/3CE audiometer (Viola Plus)

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 (Viola Plus only)

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 / DD45 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: 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, ER-3C 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 / DD45	AC ER-3C	BC
125	80	90	-
250	100	105	45
500	110	110	65
750	115	115	70
1.000	120	120	75
1.500	120	120	80
2.000	120	120	80
3.000	120	120	75
4.000	120	110	75
6.000	105	95	55
8.000	95	90	50

SPEECH AUDIOMETRY: MAXIMUM LEVELS (dB HL)

AC (*) TDH-39	AC ER-3C	BC
100	100	55

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

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 Maestro

DISPLAY

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

POWER SUPPLY

Without integrated printer:
 Main Unit: 6Vdc, 1.3A
 External adapter: 100-240 Vac 50/60 Hz 0.9-0.34A 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: 1.9 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: IEC 60645-5 / ANSI S3.39
 Pure tone audiometry: IEC 60645-1 / ANSI S3.6
 Speech audiometry (Viola Plus): IEC 60645-1 / ANSI S3.6
 Calibration: ISO 389-2 (IPSI), ISO 389-1 (CONTRA TDH 39, DD45)
 ISO 389-2 (CONTRA IME-100)
 Electrical safety: IEC 60601-1
 EMC: IEC 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)

PRODUCT CODES

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

INCLUDED PARTS

- Main unit
- Control box with probe
- Shoulder strap for probe control box
- Wrist strap for probe control box
- Single TDH-39 or DD45 contralateral headset or IME-100 contralateral earphone
- Calibration cavities
- Assorted ear tips box
- 3pcs heat-sensitive paper rolls (only for models with printer)
- TDH-39 or DD45 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

OPTIONAL ACCESSORIES (with order code)

- 10833: ER-3C insert earphones
- 10177: IME-100 insert masking earphone
- 10342: IME-100 Insert earphone for contra reflex testing
- 10181: Desktop, battery operated microphone for live speech tests (Viola Plus only)

OPTIONAL PARTS (with order code)

- 10182: Soft carrying case
- 11672: Handheld support for Inventis tympanometers probe
- 10179: Amplivox Audiocups noise excluding enclosures for TDH-39 and DD45 headphones
- 10533: QuickSIN® test license (Viola Plus only)
- 10180: Cable set for sound booth with Jack sockets
- 10557: Cable set for sound booth with RCA sockets

DISPOSABLES (with order code)

- 10293: Thermal paper for printer (box of 5)
- 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

	Viola Basic	Viola Plus
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:

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