

*Sibelmed*

**NEW RANGE OF AUDIOMETER PRODUCTS**  
"screening", basic diagnosis, clinical diagnosis



**AUDIOMETER SIBELSOUND 400**

**Main features\*:**

- Advanced digital technology based on DSP
- Calculation of hearing loss and diagnosis
- Internal database > 1000 tests
- Suprathreshold tests
- High frequency
- Musical frequencies
- Automatic masking
- Connectivity with other management systems (EMR - Electronic Medical Record)
- Customizable settings

\*see configurations

 **USB**

**Creating the future**

# SIBEL SOUND 400 · audiometer

## NEW RANGE OF AUDIOMETER PRODUCTS

### CONFIGURATION ACCORDING TO MODEL

	A	A M	A O	A O M	A O M +	S U P R A
Two channels	■	■	■	■	■	■
Pure tone threshold audiometry by air conduction	■	■	■	■	■	■
Pure tone threshold audiometry by bone conduction	●	●	■	■	■	■
Pure tone threshold audiometry by free field	●	●	●	●	●	●
Pure tone suprathreshold audiometry (SISIGRAM)	●	●	●	●	■	■
Pure tone suprathreshold audiometry (Fowler-ABLB, Tone Decay, Weber, Lüscher, etc.)	●	●	●	●	●	■
Speech audiometry	●	●	●	●	■	■
High frequency audiometry	-	-	-	●	●	●
Masking with narrow band noise	●	■	●	■	■	■
Masking with white noise	●	■	●	■	■	■
Masking with speech noise	●	●	●	●	■	■
Synchronized masking	●	■	●	■	■	■
Intermediate frequencies: 125, 750, 1500 Hz	●	●	●	●	■	■
Musical frequencies	●	●	●	●	■	■
Selection of exploration frequencies	■	■	■	■	■	■
Continuous and pulse tone	■	■	■	■	■	■
Pulse/alternating tone and modulating/alternating tone	●	●	●	●	■	■
Reference tone (1 dB)	-	-	-	●	■	■
Frequency modulation and amplitude modulation	-	-	-	●	●	■
Calculation of hearing loss	■	■	■	■	■	■
Diagnosis (COUNCIL, IMSS MEXICO, ELI, SAL, KLOCKHOFF, MOH, others...)	■	■	■	■	■	■
Internal database for more than 1000 tests	●	●	●	■	■	■
Intercom / Monitor	●	●	●	●	■	■
USB and parallel connections to external printer	■	■	■	■	■	■
USB computer connection	■	■	■	■	■	■
RS232 computer connection	●	●	●	●	●	●
Audiometry software (Demo)	■	■	■	■	■	■
Audiometry software (Licence)	●	●	●	●	●	■
Sound suppressors for air conduction	●	●	●	●	●	●
External printer	●	●	●	●	●	●
User manual and quick user guide	■	■	■	■	■	■
Carrying bag	●	●	●	●	●	●
Audiometer type according to IEC60645	4	4	4	3	2	2

■ STANDARD ● OPTIONAL - NOT AVAILABLE



# SIBELSOUND 400 · audiometer

## THE EXPERIENCE SUPPORT US

### Description

The *SIBELSOUND 400*, is a revolutionary two-channel audiometer. The entire system is controlled by Digital Signal Processor (DSP) for reliable, quick and easy audiometric exploration of hearing thresholds and screening tests, such as suprathreshold pure tone tests.

The *SIBELSOUND 400* audiometer was developed by SIBEL, S.A.'s RDI department in collaboration with the Surgery Department (Ear, Nose and Throat and Audiology) of the University of Barcelona and well-known specialists in the field, in accordance with standard criteria of both national institutions such as the UNE and international institutions such as the IEC, ISO, etc.

### DSP digital technology

A Digital Signal Processor that uses an optimised microprocessor for applications that require very high-speed numerical operations. The processor is capable of working with multiple data in parallel, while its design and specific instructions are ideal for digital processing, features that distinguish a DSP from other types of processors.

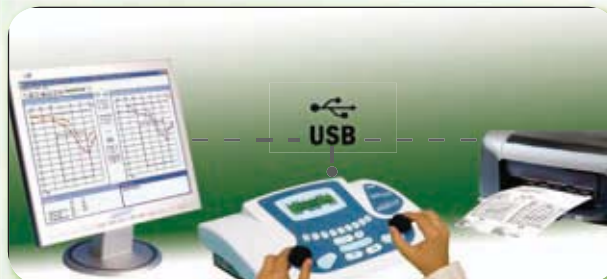
### Communications

One of the great qualities of the *SIBELSOUND 400*, is a communications system with other equipment that allows it to:

- Print directly to a USB printer
- Transfer information from the unit's internal database to a PC
- Communicate with a PC in real time
- Export patient tests to other management systems (EMR)
- Update the unit's internal firmware

Using the appropriate software, communications can be established through two different channels:

- USB (standard)
- RS232C Serial (optional)



### Signals

The *SIBELSOUND 400* features:

- Pure tones (continuous, pulse, alternate)
- Frequency modulation
- Amplitude modulation
- Speech Noise
- Narrow Band Noise
- White Noise

Customizable



# SIBELMEDI 400 · audiometer

## INNOVATION AND TECHNOLOGY

### **Reset**

To return to the previous menu, cancel an action, delete data entries or place the counters at zero.

### **Save**

Saves a test to the database.

### **Intercom**

Activates the technician/patient intercom.

### **Right ear attenuator**

Activates or deactivates a signal, depending on the "direct/inverted" working mode.

### **SISIGRAM**

Generates the manual increases in the SISIGRAM test.

### **Left ear attenuator**

Activates or deactivates a signal, depending on whether the working mode is direct or inverted.



### **Right channel signal**

Silencer or key which, when activated, sends or blocks the signal transmitted to the patient, depending on whether the working mode is direct or inverted.

### **Invert**

This inverts the direct/inverted working mode of the signal keys.

### **Left channel signal**

Silencer or key which, when activated, sends or blocks the signal transmitted to the patient, depending on whether the working mode is direct or inverted.

### **Hz.**

Decreases and/or increases the frequency of the pure tone signal applied to the patient.

### **Intro**

Used to save a test's thresholds and to give selected information.

### **Patient**

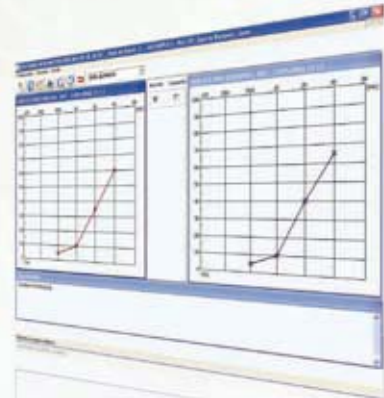
Used to enter patient reference information in a test to be printed, store in the unit's internal database or transfer to a PC's database.

## ADDED VALUE

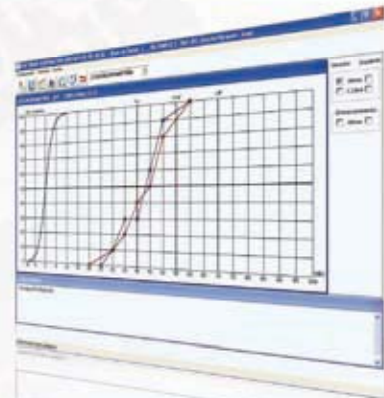
### Audiometry software W50

SIBELMED W50 is sophisticated software for viewing, storage, transmission, analysis and introduction of audiometric tests in a Microsoft Windows<sup>®</sup> environment with the following options:

- Management of various patient databases
- Download of audiometric test data from SIBELSOUND 400 and AC50 audiometers
- Manual audiometric test data input performed with other audiometers
- Display of different types of audiometric tests
- Diagnosis:  
(COUNCIL, IMSS MEXICO, ELI, SAL, KLOCKHOFF, MOH, others...)
- Choice of various types of diagnosis parameters
- Test graphics
- Comparison of tests from the same patient
- Customizable reports
- Test report printouts
- Option for deleting tests from the unit



• SISIGRAM



• SPEECH-AUDIOMETRY



• PURE TONE AUDIOMETRY

# SIBEL SOUND 400 · audiometer

## INNOVATION AND TECHNOLOGY

### Technical Specifications

FREQUENCIES AND LEVELS												
STANDARD FREQUENCY	125	250	500	750	1000	1500	2,000	3000	4000	6000	8000	Hz
MUSICAL FREQUENCY	131	262	523	—	1047	—	2093	—	4186	—	8372	Hz
Air conduction	80	100	120	120	120	120	120	120	120	110	110	dB HL
Bone conduction	—	50	60	60	70	70	70	70	70	—	—	dB HL
Free field	—	70	80	80	80	80	80	80	80	80	—	dB HL
MASKING NOISE												
Narrow bandwidth AC	60	80	100	100	100	100	100	100	100	100	90	dB HL
Narrow bandwidth BC	—	50	60	60	70	70	70	70	70	—	—	dB HL
White AC							100					dB SPL
Speech							100					dB SPL
LOGO-AUDIOMETRY												
Air conduction							100					dB SPL
Free field							80 dB at 1m from the patient					dB SPL
HIGH FREQUENCY												
	8000	9000	10,000	11,200	12,500	14,000	16,000	18,000	20,000			Hz
Air conduction	90	90	90	90	50	50	50	50	50			dB HL
Minimum levels												
All options	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	dB HL
HIGH FREQUENCY	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	dB HL
Level increases												
STANDARD	5	5	5	5	5	5	5	5	5	5	5	dB
Reference tone	1	1	1	1	1	1	1	1	1	1	1	dB
Frequency precision							± 1%					
Level precision							± 2%					dB SPL

**Channels:** Two

**Functional specifications:** See tables of models and frequencies

**Transducers:** TDH39 - HDA200 - B71 (depending on the model)

**Screen:** LCD alphanumeric backlighted 2 X 16

**Protection:** Time restricted high frequency signals to protect both patient and unit

**Self-check:** Automatically checks the status of the audiometer

**Unit test:** Allows the user or technician to check the condition of certain functions or components

**Custom settings:** Programme to personalise the audiometer according to the needs of the user

**Calibrations:** Equipped with calibrations according to ISO and ANSI

**Safety standards:** EN60601-1, EN60601-1-1, EN60601-1-2, EN60601-1-4

**Audiometry standards:** IEC60645-1, IEC60645-2, IEC60645-4

**Calibration standards:** EN ISO 389-1, EN ISO 389-3, EN ISO 389-4, EN ISO 389-5, EN ISO 389-7, ANSI S3.6-2004

**Working temperature:** 10 to 40 °C

**Relative humidity:** <90% (no condensation)

**Power supply:** 100 to 240V ±10% / 50/60 Hz ±3%

**Power:** <50 VA

**Dimensions:** 390 mm x 260 mm x 105 mm

**Weight:** 2.4 kg without accessories

**Standard accessories:** Depending on the model

**Optional accessories:** Depending on the model



EN-ISO 13485:2003



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