



# Octave Sound Level Meter

BSWA308/309

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BSWA308/309



BSWA 308/BSWA 309 are octave sound level meters updating the dual-core (DSP+ARM) architecture to single chip ARM with float point unit, and updating all fix-point calculation to float-point, which significantly improves the accuracy and stability. Re-design analog front end circuit also lower the noise floor and linear range of product.

BSWA 308 is Class 1 and BSWA 309 is Class 2. Both instruments have certificated by the China CPA (Certification of Pattern Approval) and CMC (China Metrology Certification).



BSWA 308

BSWA 309

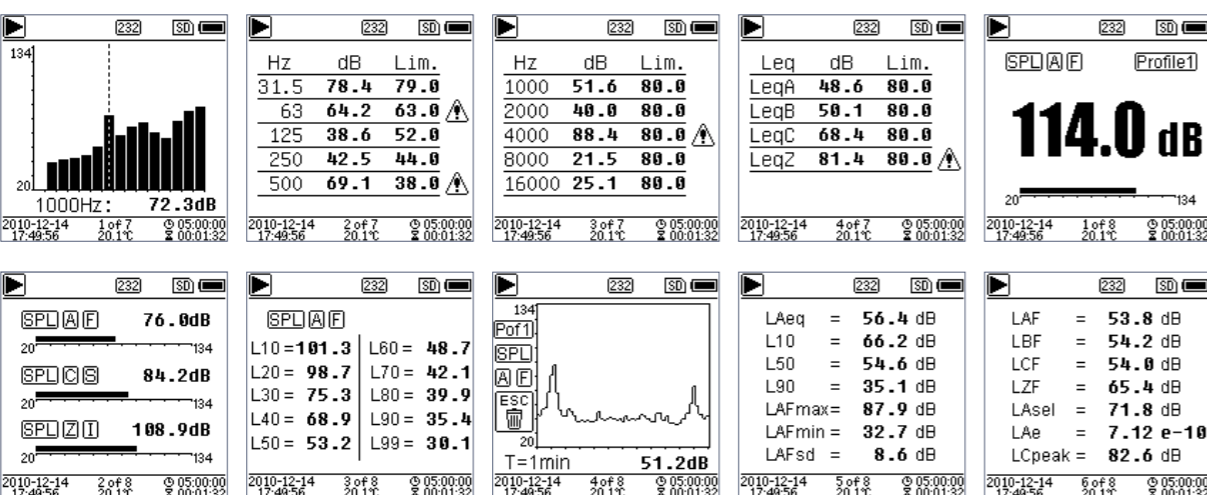
## FEATURES

- Class 1 (BSWA 308) and Class 2 (BSWA 309) sound level meter
- Comply with IEC 61672-1:2013, ANSI S1.4-1983 and ANSI S1.43-1997
- 1/1 Octave in accordance with IEC 61260-1:2014 and ANSI S1.11-2004
- Linearity range: 20dBA~134dBA (BSWA 308), 25dBA~136dBA (BSWA 309)
- Single range to cover 123dB/122dB dynamic range
- Frequency weighting: A/B/C/Z. Time weighting: Fast/Slow/Impulse
- 3 profile calculation in parallel with different frequency/time weighting. 14 custom define measurement
- Calculate SPL, LEQ, Max, Min, Peak, SD, SEL, E
- LN statistics and time history curve display
- User define integral period measurement, integral period up to 24h
- High speed ARM core with FPU (Float Point Unit) to achieve wide frequency response, large dynamic range and low noise floor
- 4G MicroSD card (TF card) mass storage
- RS-232 remote control port
- Mini thermal printer for measurement data print
- Internal GPS module (option), support GPS timing.

## APPLICATION

- Basic noise measurement
- Environmental noise assessment
- Product quality check
- Evaluation of noise reduction engineering

Specifications		
Type	BSWA 308	BSWA 309
Accuracy	Class 1 (Group X)	Class 2 (Group X)
Standard	GB/T 3785.1-2010, IEC 60651:1979, IEC 60804:2000, IEC 61672-1:2013, ANSI S1.4-1983, ANSI S1.43-1997	
Octave <sup>1</sup>	1/1 Octave, Centre Frequencies: 31.5Hz to 16kHz GB/T 3241-2010 Class 1, IEC 61260-1:2014 Class 1 ANSI S1.11-2004 Class 1	1/1 Octave, Centre Frequencies: 31.5Hz to 8kHz GB/T 3241-2010 Class 2, IEC 61260-1:2014 Class 2 ANSI S1.11-2004 Class 2
Supplied Microphone	MPA231T: 1/2" prepolarized measurement microphone, Class 1. Sensitivity: 50mV/Pa. Frequency Range: 10Hz~20kHz.	MPA309T: 1/2" prepolarized measurement microphone, Class 2. Sensitivity: 40mV/Pa. Frequency Range: 20Hz~12.5kHz.
Mic Interface	TNC connector with ICCP power supply (4mA/24V)	
Detector / Filter	Fully float-point digital signal processing (digital detector and filter)	
Integral Period	1s-24h user define integral period. Repeat time: infinite, 1~9999	
Measurement Functions	L <sub>XY(SPL)</sub> , L <sub>Xeq</sub> , L <sub>XYSD</sub> , L <sub>XSEL</sub> , L <sub>XE</sub> , L <sub>XYmax</sub> , L <sub>XYmin</sub> , L <sub>XPeak</sub> , L <sub>XN</sub> . Where X is the frequency weighting: A, B, C, Z; Y is time weighting: F, S, I; N is the statistical percentage: 1~99.	
24h Measurement	Automatic measurement and log the history data	
Frequency weighting	Parallel A, B, C, Z	
Time Weighting	Parallel F, S, I and Peak detection	
Self-noise <sup>2</sup>	Sound: 18dB(A), 23dB(C), 31dB(Z) Electrical: 11dB(A), 16dB(C), 21dB(Z)	Sound: 20dB(A), 26dB(C), 31dB(Z) Electrical: 14dB(A), 19dB(C), 24dB(Z)
Upper Limit <sup>2</sup>	134dB(A) Increase to 154dB(A) with 5mV/Pa Microphone	136dB(A) Increase to 154dB(A) with 5mV/Pa Microphone
Frequency Response <sup>1</sup>	10Hz~20kHz	20Hz~12.5kHz
Level Linearity Range <sup>2,3</sup>	20dB(A)~134dB(A)	25dB(A)~136dB(A)
Dynamic Range <sup>2</sup>	123dB (11dB(A)~134dB(A))	122dB (14dB(A)~136dB(A))
Peak C Range <sup>2,3</sup>	45dB(A)~137dB(A)	47dB(A)~139dB(A)
Electrical Input	Maximum input voltage: 5Vrms (7.07Vpeak). Input impedance of preamplifier: >6GΩ	
Range Setting	Single range to cover whole dynamic range	
Resolution	24Bits	
Sampling Rate	48kHz	
Noise Curve	Time domain noise curve display. Duration time: 1min, 2min, 10min	
LCD Display	160x160 LCD with white backlight, 14 step contrast level	
Mass Storage	4G MicroSD card (TF card)	
Post-processing	Post-processing software VA-SLM can read, analyze and generate reports of store data.	
Export Data	Directly connect to the computer to read the memory card (USB disk)	
Output	AC (max 5VRMS output), DC (10mV/dB), RS-232 serial interface and USB virtual serial port	
Alarm	User define alarm threshold. LED indicate the alarm status	
Power Supply	4x1.5V alkaline batteries (LR6/AA/AM3), sustainable use of approx.10 hours (depends on battery). It also can be supply by external DC power (7V~14V 500mA) and USB power (5V 1A)	
RTC	Built-in backup battery has been calibrated at factory to the error <26s in 30days (<10ppm, (25±16) °C). It can keep RTC running when replacing the main batteries.GPS timing function available (option with GPS module)	
Language	English, Chinese, Portuguese, Spanish, German, French	
Firmware Update	Update firmware via USB port	
Conditions	Temperature: -10°C ~ 50°C. Humidity: 20% ~ 90%RH	
RT Temperature	Real-time temperature display on the main screen	
Size (mm)	W70 x H300 x D36	
Weight	Approx. 620g, including 4 alkaline batteries	
Option		
GPS	Receiver Type: 50 Channels; Time-To-First-Fix: Cold Start 27s, Warm Start 27s, Hot Start 1s; Sensitivity: Tracking -161dBm, Reacquisition -160dBm, Cold Start -147dBm, Hot Start -156dBm; Horizontal position accuracy: 2.5m, Timing accuracy: 30ns, Velocity accuracy: 0.1m/s; Update Rate: 1Hz, Operation Limits: Dynamic≤4g, Altitude<50000m, Velocity<500m/s	
Calibrator	CA111, Class 1, 94dB/114dB, 1kHz	
Printer	Mini thermal printer, RS-232 port	



Note:

- 1.Ignore the measurement result above 12.5kHz for type BSWA 309 alone due to microphone frequency response of Class 2 capsule.
- 2.The data was measured with 50mV/Pa microphone for BSWA 308 and 40mV/Pa microphone for BSWA 309.
- 3.Measurement according to GB/T3785 and IEC61672.