

High Sound Pressure Level Meter 308-HSPL-184

Suitable for MIL-STD-1474D measurements

The BSWA 308 is an octave sound level meter that has been updated with a new single-chip ARM processor with a floating-point unit and all fixed-point calculations have been converted to floating-point. This has resulted in a notable enhancement in accuracy and stability. Additionally, the redesigned analog front-end circuit has reduced the noise floor and improved the linear range of the product.

This instrument is certified by the China CPA (Certification of Pattern Approval) and CMC (China Metrology Certification).

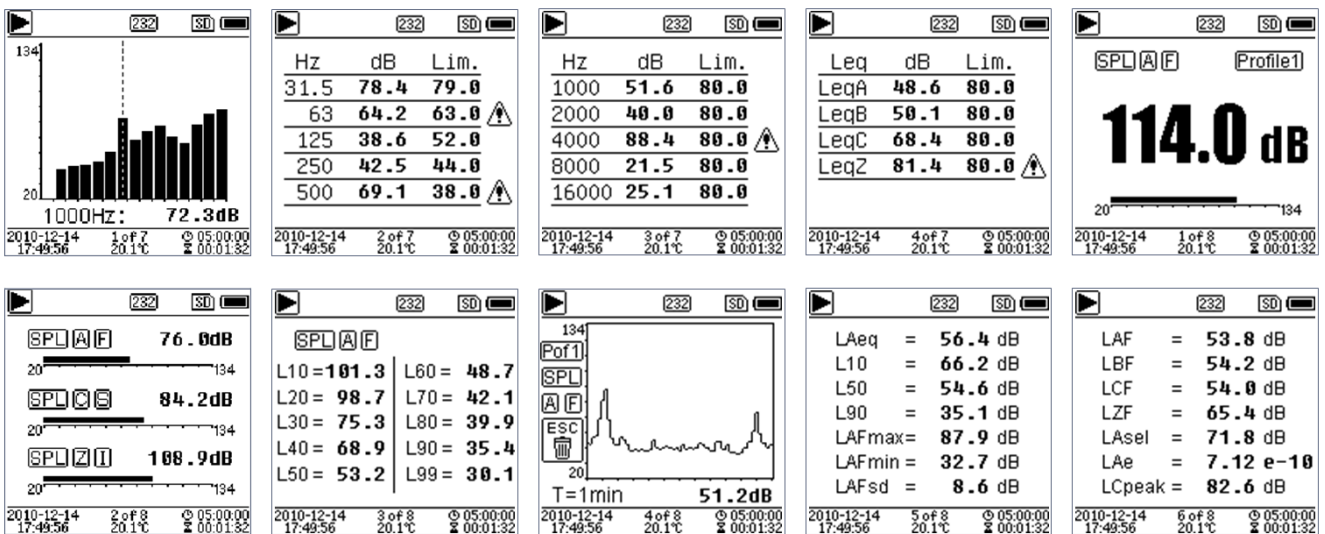


Features

- Class 1 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: 61dBA~184dBA
- Single range to cover 123dB 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

Option

- Mini thermal printer for measurement data print
- Internal GPS module (option), support GPS timing.



Type	308-HSPL-184
Accuracy	Class 1 (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 ¹	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
Supplied Microphone	MK 342 E: 1/4" prepolarized measurement microphone, Class 1. Sensitivity: 0.25mV/Pa. Frequency Range: 10Hz~20kHz.
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	$L_{XY(SPL)}$, L_{Xeq} , L_{XYSD} , L_{XSEL} , L_{XE} , L_{XYmax} , L_{XYmin} , L_{XPeak} , L_{XN} . 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 ²	Sound: 61 dB(A), 66 dB(C), 64 dB(Z) Electrical: 11dB(A), 16dB(C), 21dB(Z)
Upper Limit ²	184dB(A)
Frequency Response ¹	10Hz~20kHz
Level Linearity Range ^{2, 3}	20dB(A)~134dB(A)
Dynamic Range ²	123dB (11dB(A)~134dB(A))
Peak C Range ^{2, 3}	45dB(A)~137dB(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 0.25 mV/Pa MK 342 E microphone capsule for BSWA 308-HSPL-184
3. Measurement according to GB/T3785 and IEC61672.

MK 342 E Microphone Capsule

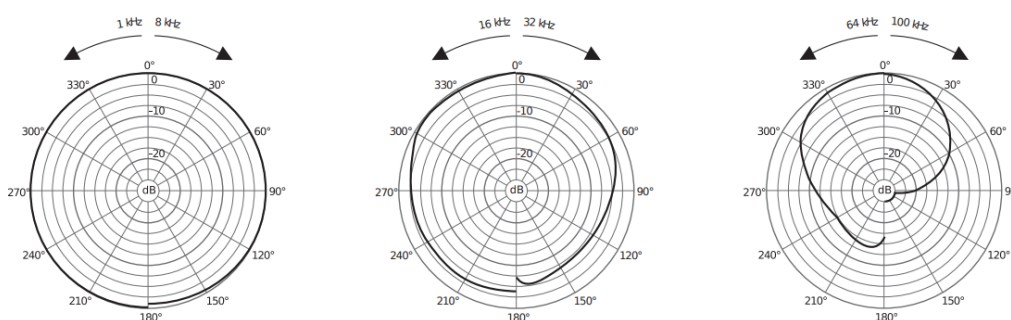
Transducer type	Capacitive pressure transducer	
Frequency range of the pressure response	± 3 dB	5 Hz to 70 kHz
	± 2 dB	5 Hz to 50 kHz
	± 1 dB	0 Hz to 20 kHz
Field Idle Transfer Factor	0.25 mV/Pa	
Limit sound pressure level for 3 % distortion at 1 kHz	186 dB	
Noise	60 dB	
Polarization voltage	backelectret	
Capacitance with polarization voltage at 1 kHz	4.2 pF	
Working temperature range	-50 ... +100 °C	
Humidity up to	70 °C, 90 %	
Temperature coefficient	≤ 0.01 dB/K	
Static pressure coefficient	0.00001 dB/Pa	
Diameter with protective cap	7 ± 0.02 mm	
Height	9.7 mm	
Weight	2 g	
Thread for preamplifier	5.7 mm 60 UNS	
Thread for protective cap	6.35 mm 60 UNS	



Maintenance and servicing

In order to ensure proper functionality, the measuring microphone capsule must be protected from mechanical damage and, depending on the conditions of use, checked on all sides for contamination at intervals to be specified in the operating voltage-free state. After removing the protective cap, the impurities in its interior, as well as on the membrane, should be removed extremely carefully with a soft brush or cloth. The measurement microphone capsule is not suitable for use in chemically aggressive media and conductive dust. Condensation formation must be ruled out.

Polar diagrams



Typical pressure frequency response

