

# User's Guide

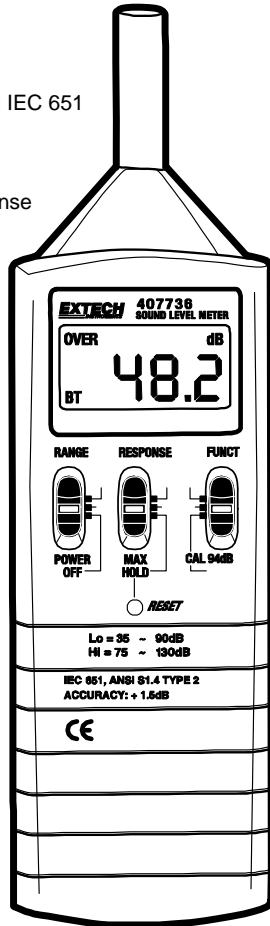
# **EXTECH**<sup>®</sup> INSTRUMENTS

A FLIR COMPANY

## Digital Sound Level Meter

MODEL 407736

- 1.5 dB accuracy meets ANSI and IEC 651 Type II standards
- A/C weighting & Fast/Slow response
- Built-in calibration check
- 0.1dB resolution



## ***Introduction***

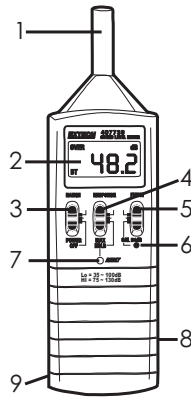
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Congratulations on your purchase of the Extech Model 407736 Digital Sound Level Meter. This meter is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

## ***Meter Description***

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1. Microphone
2. LCD display
3. POWER OFF & RANGE select switch
4. RESPONSE & HOLD select switch
5. A/C weighting and Calibration switch
6. Calibration adjust screw for 94dB
7. Reset key (resets max hold reading)
8. AC/DC analog output 3.5mm phone jack
9. Battery compartment and Tripod mount are located on the back of meter



## ***Measurement Considerations***

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1. Wind blowing across the microphone adds extraneous noise to the measurement. Use the supplied windscreen to cover the microphone when applicable.
2. Calibrate the instrument before each use if possible. Especially if the meter has not been used for a long period of time.
3. Do not store or operate the instrument in areas of high temperature or humidity.
4. Keep meter and microphone dry.
5. Avoid severe vibration when using the meter.
6. Remove the battery when the meter is to be stored for long periods of time.

# Meter Operation

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## Quick Start

1. Power the meter by moving the RANGE switch to the LO or HI position. The meter will begin displaying sound levels. If the LCD does not display, check that the battery is good.
2. Place the meter on a tripod or hold the meter in hand facing the microphone toward the source of the sound to be measured. Note that the tripod mount is on the back of meter.
3. View the measurement on the meter's LCD. An indication of 'OVER' means that the measurement is out of range. Select another measurement range in the event of an over-range condition.

## 'A' and 'C' Frequency Weighting

Use the FUNCT (function) switch to select 'A' or 'C' frequency weighting. Use 'A' weighting to have the meter simulate the response of the human ear (the human ear boosts and cuts sound levels at specific points over the frequency spectrum). 'A' weighting is used for environmental measurements, OSHA regulatory testing, law enforcement, and workplace design. Select 'C' weighting for flat response measurements (no boosting or dampening across the frequency spectrum). 'C' weighting is suitable for the operational maintenance and analysis of machinery, motors, pumps, engines, etc.

## FAST/SLOW Response Time

Use the RESPONSE switch to select FAST (125 ms) or SLOW (1 second) response time. The application at hand (and any directives or standards) will dictate which response to select. For example, most hearing conservation or OSHA related testing is done using SLOW mode and 'A' weighting.

## MAX HOLD

In this mode, the meter only updates the LCD when a higher reading than the one presently on the display is detected. Select MAX HOLD using the RESPONSE switch. The LCD shows 'MAX HOLD' in this mode. Press RESET to reset the MAX HOLD reading.

## Analog Outputs

The meter includes an AC and a DC analog output for use with chart recorders, dataloggers, etc. The AC output is 0.65V rms full scale and the DC output is 10mV per dB. The 3.5mm output jack is located on the right side of the instrument. Use a stereo mini-plug as shown in the diagram below to connect the meter to a datalogger or other recorder.

1. Sleeve: ground
2. Ring: DC out
3. Tip: AC out



## Calibration Check

This meter provides a built-in calibration adjustment. The calibration adjustment potentiometer is located on the front panel beneath the FUNCT switch. Put the FUNCT switch to the CAL 94dB position and adjust the potentiometer for a display of exactly 94dB. For calibration with an external sound level calibrator, refer to the instructions accompanying the calibrator.

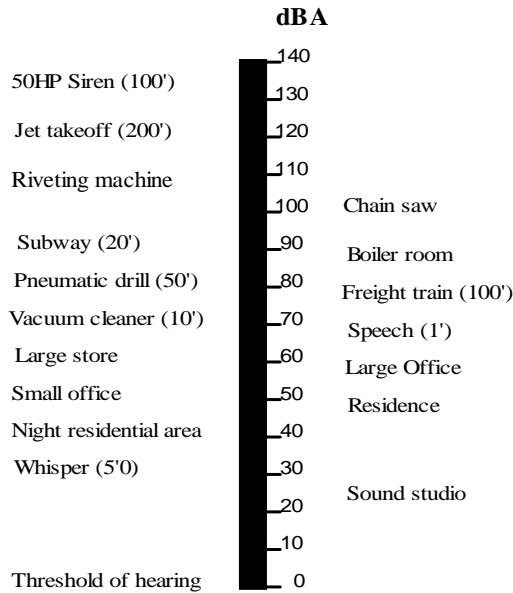
## Battery Replacement

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When the low battery message appears on the LCD replace the 9V battery as soon as possible. The battery compartment cover resides at the bottom, rear of the meter. Slide the battery compartment cover off, change the battery, and replace the compartment cover.

## Typical 'A' weighted Sound Pressure Levels

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## Warranty

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**EXTECH INSTRUMENTS CORPORATION** (A FLIR COMPANY) warrants this instrument to be free of defects in parts and workmanship for **one year** from date of shipment (a six month limited warranty applies to sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 ext. 210 for authorization or visit our website [www.extech.com](http://www.extech.com) for contact information. A Return Authorization (RA) number must be issued before any product is returned to Extech. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

## Specifications

Display	3-1/2 digit (2000 count) LCD
Display update rate	0.5 seconds
Microphone	0.5" Electret condenser
Measurement Bandwidth	31.5Hz to 8KHz
Dynamic range	55dB
Measurement Range	35 to 130dB (Low: 35 to 100; High: 65 to 130dB)
Frequency weighting	'A' and 'C' (selectable)
Applicable standards	IEC-651 & ANSI S1.4 Type 2
Accuracy / Resolution	± 1.5dB / 0.1dB
Maximum Hold decay time	<1dB / 3min
Response time	Fast: 125 milliseconds / Slow: 1 second
Built-in calibration check	1KHz internal sine wave @ 94dB
AC Analog output	0.65VAC rms (full scale); 600Ω output impedance
DC Analog output	10mVDC / dB; 100Ω output impedance (approx).
Power	9V Battery
Battery life	50 hours (typical); Low battery indicator alerts user
Operating temperature	32 to 104°F (0 to 40°C)
Operating humidity	10 to 90% RH
Dimensions/weight	9.45 x 2.68 x 1" (240 x 68 x 25mm) / 6.75oz (210g)



### Support line (781) 890-7440

Technical Support: Extension 200; E-mail: [support@extech.com](mailto:support@extech.com)

Repair & Returns: Extension 210; E-mail: [repair@extech.com](mailto:repair@extech.com)

#### Product specifications subject to change without notice

For the latest version of this User Guide, Software updates, and other up-to-the-minute product information, visit our website: [www.extech.com](http://www.extech.com)  
Exttech Instruments Corporation, 285 Bear Hill Road, Waltham, MA 02451

## Calibration and Repair Services

Exttech offers repair and calibration services for the products we sell. Exttech also provides NIST certification for most products. Call the Customer Care Department for information on calibration services available for this product. Exttech recommends that annual calibrations be performed to verify meter performance and accuracy.

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