

WARRANTY CLAUSE

METROSONICS, INC. warrants each new instrument manufactured and sold to be free from defects in material, workmanship and construction, except for batteries which may be contained therein, and that when used in accordance with this owner's manual will perform to applicable specifications for a period of one year after original delivery.

If examination by METROSONICS, INC. discloses that the product has been defective, then our obligation is limited to repair or replacement, at our option, of the defective unit or its components.

METROSONICS, INC. is not responsible for products which have been subject to misuse, alteration, accident or for repairs not performed by METROSONICS, INC.

Instruments must be returned properly packed with transportation charges prepaid to METROSONICS, INC.; return transportation charges will be F.O.B. factory. No parts shall be returned unless a return authorization number is received, which will be furnished by request.

The foregoing warranty constitutes METROSONICS, INC. sole liability, and is in lieu of any other warranty, of merchantability or fitness. METROSONICS, INC. shall not be responsible for any incidental or consequential damages arising from any breach of warranty.

TABLE OF CONTENTS

| | |
|--|-----------|
| CHAPTER 1: INTRODUCTION | 4 |
| CHAPTER 2: GETTING STARTED | 6 |
| General | 7 |
| Battery | 7 |
| Connecting The Microphone | 10 |
| Calibration & Post Calibration | 11 |
| db-3060 Setup | 14 |
| Real Time Clock | 15 |
| CHAPTER 3: db-3060 OPERATION | 16 |
| Turn The db-3060 On & Off | 17 |
| Start & Stop Logging | 19 |
| View Test Results | 20 |
| Programming | 23 |
| Output Reports | 36 |
| Clear Data | 31 |
| Secure Mode | 32 |
| CHAPTER 4: SPECIFICATIONS | 33 |
| CHAPTER 5: ACCESSORIES | 37 |
| CHAPTER 6: STORAGE | 38 |
| CHAPTER 7: SERVICE INFORMATION | 39 |
| Appendix A : Definitions of Noise Terms | 40 |

Chapter 1

INTRODUCTION

The db-3060 offers both a noise dosimeter and integrating sound level meter in one instrument. It is ideal for many applications including noise surveys, hearing conservation programs, machinery noise evaluations, community noise studies and occupational noise analysis.

This unique microprocessor based instrument measures and stores the following:

- Lavg at 2 threshold levels
- Leq at 2 threshold levels
- Lmax with relative time of occurrence
- Lpeak with relative time of occurrence
- TWA
- Dose
- Projected Dose
- Test Duration
- Total time above ceiling

The test results can be viewed on the LCD display.

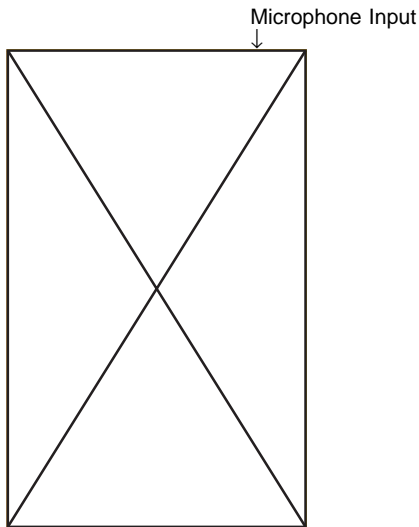
Pocket sized, the db-3060 can be hand-held, stationed on site, or worn by a worker. Its watertight construction allows complete immersion in water for short periods of time, making it ideal for outdoor use or when measurements must be taken in adverse conditions.

Although it performs sophisticated measurements, the db-3060 is easy to set up and operate. Simply press the appropriate button(s) on the clearly labeled keypad to take measurements, review data on the instrument display, select new test settings, etc. The db-3060 also has a security feature, which allows you to place the unit in secure mode to prevent use by unauthorized personnel.

Chapter 2

GETTING STARTED

Refer to the following diagram for push button control, and for connecting the microphone.



GENERAL

The db-3060 operates in either display mode, programming mode or calibrate mode. Once the unit is programmed, it retains the setup information in memory, even when power is off. Therefore, reprogramming is unnecessary unless a change is desired.

BATTERY

The db-3060 is powered by a single 9 volt alkaline battery (NEDA 1604A). Typical battery life of the db-3060 is 40 hours (at 25°C).

When the battery becomes low and cannot power the db-3060 for 8 hours of operation, the display will begin to flash. If the battery voltage drops too low for proper operation, the db-3060 displays **LOW BATTERY** and shuts down all circuits except data memory and programming information. All information will be maintained for approximately 30 days, but prompt replacement of the battery is recommended.

If the battery completely loses power or is removed for more than 20 seconds, all logged data may be lost.

NOTE: The db-3060 draws power from the battery in order to maintain data in memory.

NOTE: If the unit will not be used for an extended period of time, the battery should be removed. A new battery should be installed when the unit is used again.

Battery Replacement

The procedure for replacing the battery is very simple and can easily be performed within seconds. The db-3060 will maintain its programming information and logged data during battery replacement, provided that the replacement procedure **DOES NOT** take more than 20 seconds.

The db-3060 **MUST** be turned off before removing the bottom end-cap. If the db-3060 is turned on when the battery is removed, all logged data may be lost.

Follow these instructions for battery replacement (be sure you have a fresh battery ready before beginning this procedure):

1. Turn the db-3060 off by pressing the ON/OFF button.
2. With the label side of the unit facing up, remove the bottom end-cap using a flat head screwdriver to turn the screw.
3. Tilt the unit towards you and the old battery will slide out.
4. Slide the fresh battery, terminals first, into the battery compartment with the + and - terminals matching the diagram on the back label of the unit.
The battery must be installed in less than 20 seconds to prevent possible data loss.
5. Replace the end-cap in its original position and tighten the screw. If the end-cap is not seated correctly or the screw is not tightened correctly, the db-3060 will **NOT** be watertight.

CONNECTING THE MICROPHONE

Before you begin to display or record data, you will need to connect the microphone to the db-3060. You will also need to calibrate the microphone to assure accurate readings (see "Calibration" in next section).

The db-3060 automatically senses the presence of the microphone. Any time the unit is turned on and the microphone is not connected, the message "MIC ERROR" will be displayed. Removing the microphone while recording is in progress will interrupt the recording session.

Follow these instructions to connect the microphone to the db-3060:

1. Hold the db-3060 with the display facing you.
2. Line up the small black button on the microphone's 5 pin connector with the indentation in the outside ring of the connector hole on the db-3060, and then press the connector into the hole so that it is secure.
3. To disconnect the microphone, press the small black button, and then pull the 5-pin connector straight out of the input hole.

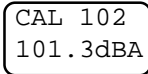
CALIBRATION & POST CALIBRATION

The microphone needs to be calibrated to assure accurate readings. We recommend calibrating the microphone before and after each recording session for complete records and data integrity.

To calibrate the microphone, you will need the Metrosonics cl-304 Acoustical Calibrator.

Follow these instructions for pre and post test calibration:

1. Connect the microphone to the db-3060 Noise Monitor.
2. Insert the microphone into the hole on the top of a cl-304 calibrator.
3. Turn the db-3060 on by pressing the ON/OFF button.
4. Turn the calibrator on by pressing and releasing the button on the bottom of the calibrator.
5. Simultaneously press the SHIFT and CALIB Buttons to enter Calibration Mode. A screen similar to following will be displayed:



CAL 102
101.3dBA

This screen indicates that you are in calibration mode, the calibration point (102.0dB) and the present sound level.

NOTE: To perform an actual calibration, data must first be cleared. If recorded data is still in memory, the db-3060 will perform a post-calibration and this screen will be in the following format:

POST 102
101.3dBA

6. Press the ENTER button to calibrate the unit. The message CAL COMPLETE will be displayed and then the unit will return to displaying present sound level readings.

NOTE: If you wish to exit the calibrate mode, without performing a calibration, simply press any button other than ENTER or RUN-STBY.

7. Turn off the calibrator by pressing the button on the bottom of the calibrator again.
8. Remove the microphone from the calibrator by pulling it straight out of the hole.
9. For post calibration, repeat steps 1 through 8 above, after the test is complete.

NOTE: A calibration is not actually performed on the recorded data when post calibrating. This is simply a verification step to insure data integrity.

NOTE: The unit **MUST** be in display mode and **CAN-NOT** be calibrated while logging.

db-3060 SETUP

The db-3060 comes to you factory programmed for common test conditions, allowing immediate operation. The applicable settings (response rate, filter, exchange rate, thresholds, ceiling, dose criterion level and dose criterion length) are set for current OSHA settings.

You can change test settings as desired. See "Programming the db-3060" in Chapter 3 for instructions. Once reprogrammed, the db-3060 will retain the new information and the factory defaults will no longer be used.

NOTE: Dose criterion length is fixed at 8 hours and the ceiling level is fixed at 115 dB - these settings cannot be changed.

Default Settings

The following is a list of the db-3060 default settings programmed at Metrosonics factory:

Criterion Level: 90 dB

Threshold 1: 80 dB

Threshold 2: 90 dB

Exchange Rate: 5 dB
Pa²h: No
Filter Weight: A
Response Rate: Slow

TIMER

The db-3060 has a timer for tracking the elapsed time of the test. The timer is also used to provide a reference for correlating when Lmax and Lpk occur - this is described as the time of occurrence relative to the start of the test.

The elapsed time is the total amount of time the db-3060 is recording. When the db-3060 is in "Standby" or is turned off, the elapsed time is paused. The timer is cleared and re-activated whenever a new test is started.

When tracking the time of occurrence for Lmax and Lpk: any time the db-3060 is in standby or is turned off is not included.

Chapter 3

db-3060 OPERATION

The instructions in this chapter assume you have reviewed Chapter 2 in this manual. If you have not reviewed Chapter 2, you should do so at this time.

These instructions also assume that you have followed the instructions in Chapter 2 and you have installed a battery, plugged in the microphone and performed the calibration procedure. If you have not done this yet, you should do so at this time.

Refer to the db-3060 diagram at the beginning Chapter 2 as needed when following the instructions in this chapter.

TURN THE db-3060 ON & OFF

1. Press the ON/OFF button. The db-3060 will turn on and display the programmed parameters, followed by the present sound level.

The programmed parameters are shown in the following format:

| |
|--------|
| S/5/90 |
| 80/90 |

The first line shows programmed response rate/exchange rate/criterion level. In this example:

S = Slow response

5 = 5dB exchange rate

90 = 90dB criterion level.

The second line shows programmed threshold level 1/threshold level 2. In this example:

80 = 80dB threshold level 1

90 = 90dB threshold level 2

The present sound level readings are shown in the following format:

| | |
|------|-----|
| SND | LEV |
| 92.4 | dB |

2. Press the ON/OFF button again to turn off the db-3060.

NOTE: The unit may **NOT** be turned off when it is datalogging. This is to prevent accidentally terminating a test. See "Start and Stop Datalogging" later in this section.

START & STOP LOGGING

1. Turn the db-3060 on.
2. While viewing the present readings, press the RUN-STBY button to start datalogging. The unit will display "RUN" for a few seconds to indicate that logging is in process.
3. Press the RUN-STBY button again to terminate logging. The unit will display "STANDBY" for a few seconds to indicate that it is NOT logging.

NOTE: To start a new test, you must first clear data (see "Clear Data" later in this chapter).

Standby

The db-3060 can record one test. When the RUN-STBY button is pressed to stop logging, the db-3060 is actually in a standby mode. If you wish to continue the test, simply press the RUN-STBY button again and the db-3060 will continue recording data.

VIEW TEST RESULTS

Use the following keypresses to view data while in display mode:

| <u>Keypress</u> | <u>Item(s) Displayed</u> |
|-----------------|--|
| SND LEV | <ul style="list-style-type: none">• SPL present sound level• battery voltage |
| Lmax | <ul style="list-style-type: none">• maximum sound level for the test• time of occurrence relative to the start of the test |
| Lavg | <ul style="list-style-type: none">• Lavg with no threshold• Lavg with first threshold• Lavg with second threshold• elapsed time of test |
| Lpk | <ul style="list-style-type: none">• Lpk for the test• time of occurrence relative to the start of the test• total time above ceiling |
| TWA | <ul style="list-style-type: none">• TWA with no threshold• TWA with first threshold• TWA with second threshold |

KeypressItem(s) Displayed

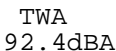
DOSE

- Dose with first threshold
- Dose with second threshold
- Projected Dose with first threshold
- Projected Dose with second threshold

Leq

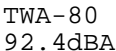
- Leq
- Leq with first threshold level
- Leq with second threshold level

NOTE: When viewing data with thresholds, the threshold value is displayed on the top line of the display, next to the statistic. For example, when viewing TWA with no threshold, the display will be in the following format:



TWA
92.4dBA

When viewing TWA with a threshold of 80 dB, the display will be in the following format:



TWA-80
92.4dBA

NOTE: If logging is in progress, the test statistics will be updated and the current readings will be displayed. If logging has been stopped, the displayed test statistics will be for the entire test.

NOTE: The total time the readings were above the ceiling level will be displayed to one decimal point when under 1 minute. The following is example of how the time above ceiling will be displayed for 2.4 seconds:

```
CEILING  
2.4 s
```

When the total time above the programmed ceiling level is above 1 minute, it will be displayed as hours:minutes:seconds. The following is an example of how the time above ceiling will be displayed for 1 hour, 12 minutes and 34 seconds:

```
CEILING  
01:12:34
```

PROGRAMMING

The following is a list of programmable parameters and the choices available:

| <u>Parameter</u> | <u>Choices</u> |
|-------------------|---|
| Criterion Level | 84, 85, 87 or 90 dB |
| Thresholds 1 & 2 | 0, 80 or 90 dB |
| Exchange Rate | 3, 4, 5 or 6 dB |
| Pa ² h | Yes, No (applicable only if the exchange rate is set to 3 dB) |
| Filter | A or C Weight |
| Response | Slow (16 samples/sec) or Fast (64 samples/sec) |

Use the following keypresses to program the db-3060:

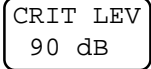
| <u>Keypress</u> | <u>Purpose</u> |
|-----------------|--|
| SHIFT & PRGM | Enter/Exit Programming Mode |
| NEXT | Display the next item to be programmed |
| SCROLL | Scroll through the list to view choices |
| ENTER | Save new programming information (must be pressed to accept selection) |

Step by Step Programming Instructions

Follow these steps to program the db-3060:

1. Turn the db-3060 on by pressing the ON/OFF button. The unit will be in Display Mode.
2. Press the SHIFT and PRGM buttons simultaneously and the db-3060 will enter Programming Mode. The message PROGRAM MODE will be displayed followed by the first programming screen, which allows selection of criterion level:

Example:



```
CRIT LEV
90 dB
```

The bottom line shows the criterion level currently programmed.

If you do NOT wish to change the criterion level, proceed to step 3.

If you wish to reprogram the criterion level, press the SCROLL button until the desired level is displayed and then press the ENTER button. You may choose 84, 85, 87 or 90 dB.

3. Press the NEXT button and the next programming screen will be displayed, which allows selection of the first threshold level:

Example:

| |
|---------|
| THRES 1 |
| 80 dB |

The bottom line shows the first threshold level currently programmed.

If you do NOT wish to change the first threshold level, proceed to step 4.

If you wish to reprogram the first threshold level, press the SCROLL button until the desired threshold level is displayed and then press the ENTER button. You may choose 0, 80 or 90 dB, with 0 being no threshold level.

4. Press the NEXT button and the next programming screen will be displayed, which allows selection of the second threshold level:

Example:

| |
|---------|
| THRES 2 |
| 90 dB |

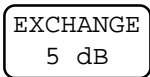
The bottom line shows the second threshold level currently programmed.

If you do NOT wish to change the second threshold level, proceed to step 5.

If you wish to reprogram the second threshold level, press the SCROLL button until the desired threshold level is displayed and then press the ENTER button. You may choose 0, 80 or 90, with 0 being no threshold level.

5. Press the NEXT button and the next programming screen will be displayed, which allows selection of the exchange rate:

Example:



The bottom line shows the exchange rate currently programmed.

If you do NOT wish to change the exchange rate, proceed to step 6.

If you wish to reprogram the exchange rate, press the SCROLL button until the desired exchange rate is displayed and then press the ENTER button. You may choose 3, 4, 5 or 6 dB.

6. If the db-3060 is programmed for an exchange rate other than 3 dB, skip to step 7.

If the db-3060 is programmed for a 3 dB exchange rate, press the NEXT button and next programming screen will be displayed, which allows choosing to view dose and projected dose in Pa2h instead of in percent (%). This only applies when the db-3060 is programmed with a 3 dB exchange rate.

Example:

| |
|-------|
| Pa2h? |
| No |

The bottom line shows the current setting for displaying dose and projected dose.

If you do NOT wish to change this setting, proceed to step 7.

If you wish to change the way dose and projected dose are displayed, press the SCROLL button to choose Yes (display dose and projected dose in Pa2h) or No (display dose and projected dose in %), and then press the ENTER button.

7. Press the NEXT button and the next programming screen will be displayed, which allows selecting the filter weighting:

Example:

| |
|----------|
| FILTER |
| A WEIGHT |

The bottom line shows the filter weight currently programmed, which will be either "A" or "C".

If you do NOT wish to change the filter weight, proceed to step 8.

If you wish to reprogram the filter weight, press the SCROLL button to select A or C, and then press the ENTER button.

8. Press the NEXT button and the next programming screen will be displayed, which allows selecting the response rate:

Example:

| |
|----------|
| RESPONSE |
| SLOW |

The bottom line shows the response rate currently programmed, which will be either "Fast" or "Slow".

If you do NOT wish to change the response rate, proceed to step 9.

If you wish to reprogram the response rate, press the SCROLL button to select Fast or Slow, and then press the ENTER button.

9. Press the SHIFT and PRGM buttons simultaneously to exit Programming Mode and return to Display Mode OR press the NEXT button to cycle through the programming choices again.

NOTE: You may exit from programming at any time by pressing the SHIFT and PRGM buttons simultaneously.

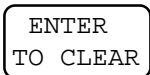
CLEAR DATA

Clearing data erases ALL recorded data from the db-3060.

NOTE: The unit MUST be in Standby (not recording) to clear data.

Follow these instructions to clear the data:

1. Turn the db-3060 on.
2. While the unit is in Display Mode, press the SHIFT and CLEAR buttons simultaneously. The following screen will be displayed:



3. Press the ENTER button. The message "DATA CLEARED" will appear to indicate that the data has been cleared, and then the db-3060 returns to displaying present sound level readings.

NOTE: If desired, you may press any button other than RUN or ENTER to abort clearing data.

SECURE MODE

Secure mode can ONLY be enabled when the unit is recording. Once the db-3060 is in secure mode, you CANNOT access any function or change any parameters. When keys are pressed, the message "RUN" is displayed momentarily and then the screen goes blank.

To enable/disable Secure Mode:

1. Turn the db-3060 on and begin recording.
2. Press the LAVG and LEQ buttons simultaneously and the db-3060 will enter secure mode. The message "RUN SECURED" will be displayed and then the screen will go blank.
3. To disable Secure Mode, press and hold the LAVG and LEQ buttons for 3 seconds. The db-3060 will display the message "CLEAR SECURE". It will then return to displaying the present sound level readings.

Chapter 4

SPECIFICATIONS

ANALOG CIRCUITS

Input: Rugged 1/4" miniature microphone on a 1 meter detachable cable

Frequency Response: A or C weighted

Averaging Response: Fast or Slow

Detector Type: True RMS

Amplitude Range (SND LVL, Lavg, Lmax): 40 to 140 dB

Peak Measurement Range (Lpk, C weighted): 28 dB starting at 115 dB

DIGITAL CIRCUITS

Dynamic Range: 100 dB

Amplitude Resolution: 0.1 dB

Dose Resolution: .01%

Sampling Rate:

Slow: 16 samples/second

Fast: 64 samples/second

OPERATING CONTROLS

Keyboard: Sealed membrane keypad allows touch-control of all operational and display modes

Secure Mode: To restrict keypad access to authorized personnel.

RUN-STBY

Standby mode inhibits acquisition of data during calibration, prior to test or during test.

DISPLAY MODE

Display: 16-character alphanumeric LCD

SND LEV: Current Slow or Fast, A or C weighted sound level (dB)

Lmax: Maximum sound level sampled during test

Lavg: Average sound level sampled during test

Leq: Average sound level using a 3 dB exchange rate.

Lpk: Maximum C weighted peak pressure during test

TWA: Time weighted average (8 hour)

Dose: Current percent noise dose

Proj. Dose: Expected 8-hour noise dose if environment does not change. Based on current dose and elapsed time.

Time Above Ceiling: Amount of time the noise level was above 115 dB

Time: Elapsed time in hours, minutes and seconds

Battery Voltage: Present voltage of installed battery

USER PROGRAMMABLE PARAMETERS

Threshold Sound Level (Lt): 0, 80 or 90 dB

Criterion Sound Level (Lc): 84, 85, 87 or 90 dB

Exchange Rate: 3, 4, 5 or 6 dB

Response Rate: Slow or Fast

Filter: A or C

Dose: % or Pa²h

APPLICABLE STANDARDS

Complies with applicable Type 2 portions of ANSI S1.4, ANSI 1.25, IEC 651 and IEC 804. Also complies with OSHA Hearing Conservation Amendment, August 1981.

ENVIRONMENTAL

Operating Temperature: 10 to 60°C (14 to 140°F)

Humidity:

Short Term: Complete immersion, except microphone

Long Term: To 95% R.H., non-condensing

POWER

Operational: Typically 40 hours at 25°C

Data Retention: one month

Battery: 9V Alkaline

PHYSICAL

Case: Anodized aluminum extrusion with gasketed watertight seals

Size: 3.0 x 5.2 x 1.0 inches (7.6 x 13.2 x 2.5 cm)

Weight: 15 oz. (0.45 kg)

Specifications subject to change without notice.

Chapter 5

ACCESSORIES

ba-004: Replacement Batteries

***ca-3025:** Microphone Extension Cable, 25 ft.

***ca-3095:** Microphone Extension Cable, 95 ft.

cc-303: Briefcase

cc-304: Carrying Case

cc-304H: Heavy Duty Carrying Case

cc-306: Transit Case

cl-304: Acoustical Calibrator

***mk-3100P:** 1/4" Boom Microphone

***mk-3100R:** 1/4" Microphone

ms-206: Clothing Clip

ms-207: Tripod

ms-307: SLM Bracket

sc-307: Storage Case

ws-307: Foam Microphone Shield

* These accessories are approved for use in hazardous atmospheres.

Chapter 6

STORAGE

If the db-3060 will not be used for an extended period of time, it is recommended that the battery be removed and a new battery installed when the unit is to be used again.

Chapter 7

SERVICE INFORMATION

In the event the db-3060 needs repair service, call or fax Metrosonics Repair Department at:

Tel: (716) 334-7300

Fax: (716) 334-2635

The Repair Department will try to determine the cause of the apparent malfunction and provide necessary support to correct the problem.

In some cases, apparent problems (or misunderstandings) can be corrected over the phone. Therefore, before returning the db-3060 to the factory for service, discuss all problems with the Repair Department. An RMA number is required for all returned equipment.

Appendix A

DEFINITIONS OF NOISE TERMS

Response Rate

Instruments used to measure sound level have selectable response time constants, which were originally established to describe the dynamic response characteristics of analog sound level meters. Two most commonly used time constants which are in common use are: Slow (1 second) and Fast (.125 second). Typical occupational and environmental noise regulations require a Slow response rate.

Filter (A-Weighted and C-Weighted)

The db-3060 has two types of selectable filters: an A-weighted filter that simulates how the ear perceives noise at low levels, and a C-weighted filter that simulates how the ear perceives noise at high levels. Typical occupational noise regulations require an A-weighted filter.

Dose Criterion Level (Permissible Exposure Level)

The dose criterion level is the average sound level at which the dose criterion length (in hours) represents 100% of an allowable exposure for a given regulation. OSHA requires a dose criterion level of 90 dB.

The db-3060 will calculate the % Dose based on 8 hours at the criterion level selected.

Dose Criterion Length

The dose criterion length is the permissible exposure duration (in hours) for a given regulation. Since regulations currently in practice require a dose criterion length of 8 hours, the db-3060 always uses a dose criterion length of 8 hours.

Exchange Rate (Doubling Rate)

Regulatory limits on unprotected exposure are commonly stated in terms of the maximum permissible exposure time (criterion length) at a specified sound level (criterion level). For example, OSHA specifies 8 hours at 90 dBA.

The exchange rate is the increase in sound level for which the permissible exposure time is halved, OR the decrease in sound level for which the permissible exposure time is doubled.

For example, OSHA regulations stipulate that an unprotected worker may be exposed to noise levels of 90 dB for 8 hours. Since OSHA's exchange rate is 5 dB, for every 5 dB the noise exposure increases the permissible exposure time is cut in half, and for every 5 dB the noise exposure decreases the permissible exposure time is doubled. Thus, a worker could be exposed to a noise level of 95 dB for only 4 hours.

Other exchange rates in use include 3 (ISO), 4 (DOD) and 6 dB.

Threshold Level (Cutoff Level)

All sound levels at or above the threshold level are averaged into the calculations relating to noise exposure. All sound levels below the threshold level are not included. For example, if an 80 dB threshold is selected, all samples of sound levels equal to or greater than 80 dB will be included in the calculations for noise exposure. This is an arbitrary procedure used by OSHA and other regulations. OSHA requires dual threshold levels of both 80 and 90 dB.

Ceiling

The maximum allowable sound level an unprotected worker may be exposed to. For example, OSHA does not permit unprotected workers to be exposed to sound levels, measured with a Slow response, above 115 dB.

Lav (Average Level)

Lav is the average sound level (in dB) computed for a chosen averaging time duration. Lav with a 3 dB exchange rate is referred to as Leq (equivalent sound level).

TWA (Time Weighted Average)

The TWA is the level (in dB) at which exposure for the criterion length would produce a noise dose equal to that obtained for a shift length of arbitrary duration. In other words, it is a conversion of the actual noise dose to an equivalent exposure sound level for 8 hours.

For example, if a worker accumulated 100% noise dose in 16 hours with a continuous exposure of 85 dBA, the corresponding TWA for 8 hours of exposure would be 90 dBA.

Lmax (Maximum Level)

Lmax is the maximum sound level observed during a measurement interval with a particular response setting (Slow or Fast). OSHA specifies that an Lmax measured with a Slow setting must not exceed 115 dBA.

Lpk (Peak Level)

Lpk is the highest instantaneous sound pressure level observed during a measurement interval. Under OSHA regulations, unprotected workers may not be exposed to peak sound levels greater than 140 dB.

8 Hour Dose

This is the actual dose (as a percentage) accumulated for the actual work shift length based on a regulation's defined criterion level and criterion length.

8 Hour Projected Dose

This is a computed estimation (as a percentage) of what the projected dose would be for an 8 hour work shift. Such estimations are useful in preliminary workplace surveys. For example: a worker's exposure may be monitored for 1 hour and a dose of 40% is obtained. If the assumption is made that for the remaining 7 hours of the shift the worker will continue to experience the same noise exposure, the instrument will compute an estimated 8 hour projected dose of 320%.