R8086

REED INSTRUMENTS

Noise Dosimeter

WARRANTY 2 YEAR WARRANTY

Instruction Manual

Table of Contents

Introduction 4
Product Quality 4
Safety 5
Features 5
Specifications 6-7
Included 7
Instrument Description 8
Display Description 9
Software Installation 10
Software vs. Meter Operation 10
Operating Instructions 11-14
Power On/Off 11
Setup Mode 11
Measuring Mode 11
Auto Power Off 12
Sampling Time and Auto Record 12
Real Time Clock/Date 13
94dB Offset Adjustment 13
Selecting Noise Standard 14
Test Parameter Setup 14
Calibration 15-16
Automatic Mode Calibration 15
Manual Mode Calibration 16
Sound Level Meter (SLM) Mode Operation 17

continued…

Auto Data Recording 18
Single Data Recording 18
Erase memory 18
What is Dose Noise Exposure? 19
What is Time Weighted Average (TWA)? 20
Noise Dose Measurement Procedures 21
View Logged Sound Level Readings (SLM Mode) 22
View Logged DOSE readings 22-23
Battery Replacement 23
Applications 24
Accessories and Replacement Parts 24
Product Care 24
Software User Guide 25-37
Appendix A: Measurement Parameters 38
Appendix B: Frequency Weighting Characteristics 39
Appendix C: Sound Level Meter Class Description 39
Appendix D: USA Regulations - OSHA Regulation Conversion Charts ... 40
Appendix E: Canada Regulations - Occupational Health and Safety Regulations, Occupational Exposure Limits 41
Appendix F: Noise Exposure Limits, by Canadian Jurisdiction 42
Product Warranty 43
Product Disposal and Recycling 43
Product Support 43

Introduction

Thank you for purchasing your REED R8086 Noise Dosimeter. Please read the following instructions carefully before using your instrument. By following the steps outlined in this manual your meter will provide years of reliable service.

The R8086 is a Personal Noise Dosimeter designed for occupational and environmental noise monitoring. It supports Time-Weighted Average (TWA), Noise Dose (%), Exchange Rate selection, Criterion Level adjustment, Threshold Level configuration, Peak Sound Pressure Level measurement, and comprehensive data logging for regulatory compliance and workplace safety assessments.

Product Quality

This product has been manufactured in an ISO9001 facility and has been calibrated during the manufacturing process to meet stated product specifications. If a certificate of calibration is required please contact the nearest authorized REED distributor or authorized Service Center. Please note an additional fee for this service will apply.

Safety

Never attempt to repair or modify your instrument. Dismantling your product, other than for the purpose of replacing batteries, may cause damage that will not be covered under the manufacturer's warranty. Servicing should only be provided by an authorized service center.

continued…

Warnings:
Noise measurements performed with improper configuration may result in inaccurate exposure assessments and potential hearing risk. Always perform acoustic calibration before and after each measurement session. Do not operate the instrument in explosive atmospheres, high humidity environments, or where condensation is present. Prolonged exposure to high sound pressure levels may cause permanent hearing damage. If using alkaline batteries, remove them during extended storage to prevent leakage damage. Always install the windscreen when measuring in wind speeds greater than 10m/s to prevent erroneous readings.

Features

- Noise dosimeter, sound level meter and data logger
- Measures SPL, Dose%, LPMAX, LPMIN, PKMAX, LEQ, SEL, LEP8, TWA8, LVAG, LN5%, LN10%, LN50%, LN90%, and LN95%
- Calculates Noise Dose (%) for personal sound exposure monitoring
- A, C and Z frequency weighting
- Fast, Slow and Impulse time weighting
- Compact design with flexible armband and belt clip for long-term monitoring
- Designed to meet noise survey requirements for OSHA, MSHA, DoD, ACGIH, ISO85, and ISO90 standards
- USB interface for PC software
- Real-time clock with date and time stamping
- Selectable sampling interval (1 second to 23:59:59)
- Low battery indicator and auto shut-off

Specifications

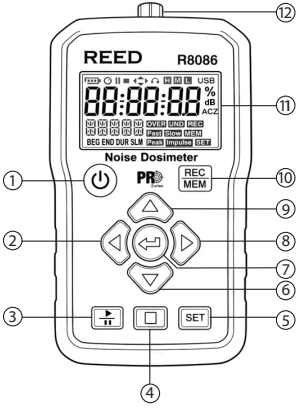
Measurement Type:	Sound Pressure Level: dB (SLM) Personal Noise Exposure: Dose % (NDM)
Measurement Mode (NDM):	SPL, Dose%, LPMAX, LPMIN, PKMAX, LEQ, SEL, LEP8, TWA8, LVAG, LN5%, LN10%, LN50%, LN90%, LN95%
Measurement Mode (SLM):	SPL, LEQ, SEL, PKMAX
Measuring Range(s):	30-140dB (A) 35-140dB (C) 40-140dB (Z)
Dynamic Range:	60dB
Accuracy:	±1.5dB (94dB 1kHz)
Resolution:	0.1 dB/%
Response Time:	1sec
Frequency Range:	20Hz to 8kHz
Frequency Weighting:	A, C, Z
Time Weighting:	Fast / Slow / Impulse
Microphone:	0.5" (12.7mm) electret condenser
General Specifications	
Display:	999999-Count LCD
Display Refresh Rate:	1 Time/sec
Datalogging Capabilities:	Yes
Real-Time Clock and Date Stamp:	Yes
Selectable Sampling Rate:	Yes (1 second to 23 hours, 59 minutes ad 59 seconds)
Internal Memory:	1,000,000 records (SLM) / 10,000 records (NDM)
Auto Shut-off:	Yes (after 15 mins/off)
Belt and Armband Clip:	Yes
Tripod Mountable:	Yes

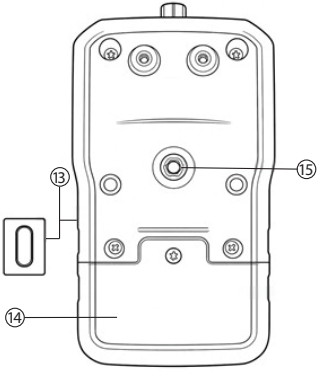
Low Battery Indicator:	Yes
Power Supply:	9V battery
PC Connectivity:	USB Cable (USB-C)
Software:	PC Software
Software OS Compatability:	Windows 7/8/10/11
Dose Standard Modes:	Occupational Safety and Health Administration (OSHA, USA), Mine Safety and Health Administration (MSHA, USA), Department of Defense (DoD, USA), American Conference of Governmental Industrial Hygienists (ACGIH, USA), ISO85/ISO90 (Europe), User Defined
Product Certifications:	CE, IEC 61252-1993, IEC 61672-1-2002, ANSI S1,25-1992, ANSI S1,4-1983, ANSI S1,43-1997
Operating Temperature:	41 to 104°F (5 to 40°C)
Storage Temperature:	14 to 140°F (-10 to 60°C)
Operating Humidity Range:	<80%
Dimensions:	4.4 x 2.6 x 1.3" (113 x 65 x 34mm)
Weight:	5.6oz (245g)

Included

- Dosimeter
- Microphone with Clip
- Windshield Ball
- Flexible Armband
- Fastener for Armband with Screw
- Belt Clip with Screws
- USB Cable
- Carrying Case
- Battery

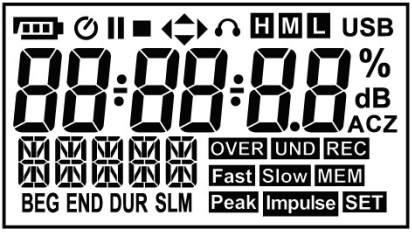
Instrument Description





1. POWER ON/OFF Button
2. LEFT Button
3. START/PAUSE Button
4. STOP Button
5. **SET** Button
6. DOWN Button
7. ENTER Button
8. RIGHT Button
9. UP Button
10. RECORD/VIEW DATA Button
11. LCD Display
12. Microphone Input Jack
13. USB-C Port
14. Battery Cover
15. Tripod/Clip Mounting Screw

Display Description



	Battery Status		Auto Power Off
II	Pause		115dB SPL Alarm
■	Stop	Peak	140dB Peak Indicator
▶	Start	USB	USB Connected
H	SPL Hi dB Range (70-140)	8	dB Display
M	SPL Mid dB Range (5-110		Test mode
L	SPL Lo dB Range (30-90)	SLM	Sound Level Meter mode
%	Noise Dose %	dB	Sound Level dB
A	A Weighting	Fast	Fast Weighting
C	C Weighting	Slow	Slow Weighting
Z	Z Weighting	Impulse	Impulse Weighting
OVER	Over-range	UND	Under-range
REC	Recording Active	BEG	Start time
MEM	Memory Status	END	End Time
SET	Settings Mode	DUR	Test duration

Software Installation

Visit www.REEDInstruments.com/software to download the R8086 software.

Full specifications and operating system compatibility are available on the product page at www.REEDInstruments.com.

For application-specific questions or assistance with software setup and functionality, contact your nearest authorized distributor or REED Customer Service at info@reedinstruments.com or 1-877-849-2127.

Software vs. Meter Operation

The R8086 can be fully configured and operated directly from the meter without the use of software. All key parameters, including measurement settings, logging intervals, and noise standards, can be adjusted using the instrument's built-in interface.

The software enhances functionality by providing:

- Simplified setup and configuration
- Real-time data visualization
- Advanced charting and analysis
- Report generation and data export
- Memory management (download and erase stored data)

For most field measurements, the meter can be used independently. The software is recommended for post-analysis, reporting, and efficient data handling.

Operating Instructions

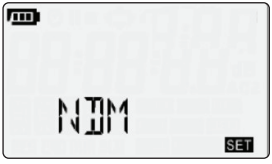
Power On/Off

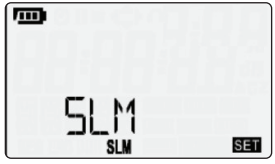
Press the POWER button to turn the meter on or off.

Setup Mode

1. Press the **SET** button to enter setup mode.
2. Press the **SET** button continuously to scroll through the seven functions available in setup mode: Test Mode, Power Off, Sampling Time & Auto Record, Real Time Clock, 94dB Offset Adjust, Noise Standard, and SLM function.
3. Once the appropriate parameter has been selected, follow the associated instructions below.

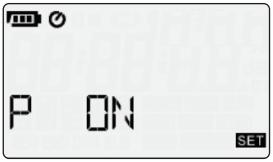
Measuring Mode





1. Press the ▲ or ▼ button to change the test mode between NDM (Noise Dose Meter) and SLM (Sound Level Meter).
2. Press the **SET** button to move to the next parameter or Press the ENTER button to exit setup mode.

Auto Power Off



1. Press the ▲ or ▼ button to enable (ON) or disable (OFF) Auto Power Off Function. With the Auto Power OFF feature enabled, the meter will automatically switch OFF after 15 minutes of inactivity to preserve battery life.
2. Press the **SET** button to move to the next parameter or Press the ENTER button to exit setup mode.

Sampling Time and Auto Record

1. Press the ▲ or ▼ button to enable (ON) or disable (OFF) the Auto Record function.
2. Press the ◀ or ▶ button to select the sampling time parameter (hours, minutes, or seconds) to be adjusted.

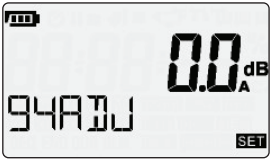
Note: The minimum sampling interval is 1 second. The maximum sampling interval is 23 hours, 59 minutes, and 59 seconds.

3. Press the ▲ or ▼ button to adjust the selected value until the desired setting is displayed.
4. Repeat Steps 2 and 3 to adjust additional time parameters, if required.
5. Press the **SET** button to advance to the next parameter, or press the ENTER button to exit Setup Mode.

Real Time Clock/Date

1. Press the ◀ or ▶ button to select the Real Time Clock (24-hour format) or Date parameter to be adjusted.
2. Press or press and hold the ▲ or ▼ button to to adjust the selected value until the desired value is displayed.
3. Repeat Steps 1 and 2 to adjust the hour, minute, second, day, month or year, as required.
4. Press the **SET** button to advance to the next parameter, or press the ENTER button to exit Setup Mode.

94dB Offset Adjustment

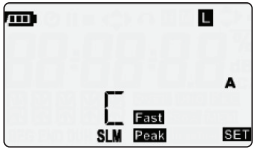


1. Refer to the "Calibration" section before proceeding with this parameter.
2. Press the **SET** button to advance to the next parameter, or press the ENTER button to exit Setup Mode.

Selecting Noise Standard

1. Press the ▲ or ▼ button to select the NDM testing standard.
2. The available standards will scroll in the following order:
   OSHA -> MSHA -> DOD -> ACGIH -> ISO85 -> ISO90 -> USER.
3. Press the **SET** button to advance to the next parameter, or press the ENTER button to exit Setup Mode.

Test Parameter Setup



1. Press the ◀ or ▶ button to select the next test parameter. The parameters will scroll in the following order:
   - Time Weighting: Fast, Slow, or Impulse
   - Frequency Weighting: A, C, or Z
   - Peak Frequency Measurement: C or Z
   - Sound Level Range: High: 70 to 140dB; Medium: 50 to 110dB; Low: 30 to 90dB
2. Press the ▲ or ▼ button to adjust the selected test parameter. The options will scroll in the following order

   H -> M -> L A -> C -> Z;

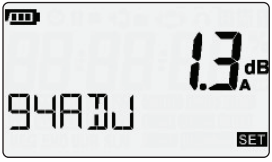
   Fast -> Slow -> Impulse Peak C -> Peak Z
3. Press the **SET** button to advance to the next parameter, or press the ENTER button to exit Setup Mode.

Calibration

Warning: Perform calibration using a certified 94dB, 1kHz acoustic calibrator.

Automatic Mode Calibration

1. Set the meter to SLM mode, A weighting, High range, and Slow time weighting.
2. Attach a 94.0dB (1kHz) sound calibrator to the microphone.
3. Enter Setup Mode and navigate to the 94ADJ parameter.
4. Press the START/PAUSE button to start the automatic calibration routine. Wait for the flashing dB value to appear on the display.



5. Press the ENTER button to save the setting and return to the measurement screen.
6. Verify that the meter reading is approximately 94.0dB.
7. If the displayed value deviates significantly from 94.0dB, repeat the 94ADJ procedure.
8. Press the ENTER button to save the setting and return to the measurement screen.

Note: The accuracy of the sound calibrator must be considered when verifying calibration results. For example, the REED R8090 Sound Calibrator has an accuracy of ±0.5dB, which may affect the displayed reading during calibration.

Manual Mode Calibration

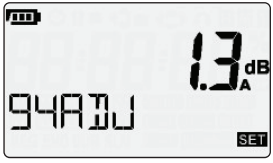
1. Set the meter to SLM mode, A weighting, High range, and Slow time weighting.
2. Attach a 94.0dB (1kHz) sound calibrator to the microphone. Allow the reading to stabilize for approximately 1 minute. Record the displayed sound level.
3. Calculate the offset by subtracting the displayed value from the source level (94.0dB).

Example:

Source level: 94.0dB

Displayed level: 92.7dB

Offset: +1.3dB

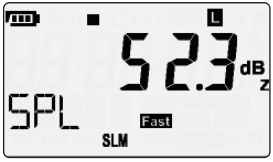


4. Enter Setup Mode and navigate to the 94ADJ parameter.
5. Press the ▲ or ▼ button to adjust the offset to the calculated value.

Example: Set 94ADJ to +1.3.

6. Press the ENTER button to save the setting and return to the measurement screen.
7. Verify that the meter reads 94.0dB (±0.1dB).

Sound Level Meter (SLM) Mode Operation



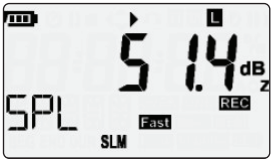
1. Press the POWER ON/OFF button to turn the meter on.
2. The LCD will display the SPL symbol with SLM shown on the lower line.
   - If SLM is not visible and NDM is on the display, press the SET button; If SPL is visible, proceed to step 3.
   - Press the DOWN button to change the mode to SLM, then press the ENTER button to exit Setup Mode.
3. Press the ▶ button to scroll through the available test functions for this mode: SPL, Leq, SEL, and PKMAX.
4. Press the START/PAUSE button to begin testing.
   - Press the Start/Pause button again to pause testing.
   - Press the Stop button to end the test.
5. If the reading exceeds the selected high range, the LCD will display "OVER".

   If the reading is below the selected low range, the LCD will display "UNDER".
6. The Leq integration time corresponds to the sampling time setting.
   - If the sampling time is set to zero, integration will continue until the user exits the mode.

Caution: Wind blowing across the microphone may cause additional noise. When wind speed exceeds 10m/s, use the windscreen to prevent measurement errors. Keep the microphone dry nd avoid severe vibration.

Note: Meter setup can also be performed using the supplied software.

Auto Data Recording



1. Press the START/PAUSE button to enable the auto record function.
2. The "REC" (Record) symbol will flash on the LCD display.
3. "WRITE" will appear in the lower left corner of the LCD, indicating that data is being stored to memory at each sampling interval.
4. When "FULL" appears in the lower left corner of the LCD, the internal memory is full.
5. The Auto Data Record function cannot be used when the memory is full.

Single Data Recording

1. Press the RECORD/VIEW DATA button to store the displayed reading.
2. The "REC" (Record) symbol will flash on the LCD display.
3. "WRITE" will appear in the lower left corner of the LCD, indicating that the data point has been saved to memory.

Note: Single Data Point Recording is disabled when Auto Data Recording mode is active.

Erase memory

When the bottom left of the LCD displays FULL, the internal memory is full. The auto function cannot be used until the data stored in memory is downloaded and cleared.

Note: The memory can only be downloaded and erased using the software.

What is Dose Noise Exposure?

The unit of measure %DOSE quantifies noise exposure accumulated during an employee's work shift. A 100% dose represents the maximum allowable noise exposure, as defined by occupational noise standards such as OSHA, CCOHS, MSHA, DoD, ACGIH, and ISO.

The meter includes pre-configured, selectable noise dose standards that automatically configure the required measurement parameters, including Criterion Level, Exchange Rate, Response Time, and Frequency Weighting, in accordance with the selected regulation.

The meter supports the following pre-configured noise dose standards:

- OSHA – Occupational Safety and Health Administration (USA)
- MSHA – Mine Safety and Health Administration (USA)
- DoD – Department of Defense (USA)
- ACGIH – American Conference of Governmental Industrial Hygienists (USA)
- ISO85 – European standard
- ISO90 – European standard
- USER – User-defined parameters (settings can be saved and imported/exported)

For reference, the OSHA Occupational Noise Standard (29 CFR 1910.95) defines noise exposure using the following criteria:

- Exchange Rate: 5dB
- Frequency Weighting: A
- Response: Slow
- Criterion Level:

90 dBA (Hearing Conservation)

90 dBA (Administrative and Engineering Controls)

- Threshold Level:

80 dBA (Hearing Conservation)

90 dBA (Administrative and Engineering Controls)

What is Time Weighted Average (TWA)?

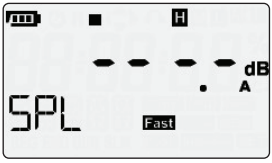
Time-weighted average (TWA) is a method of calculating a worker's daily exposure to hazardous substances such as dust, fumes, chemicals, or noise. It is averaged over an 8-hour workday or 40-hour week, along with the average exposure levels to the hazardous substance and the time spent in that area.

The TWA reflects the maximum average exposure a worker can be subjected to without experiencing significant adverse health effects over the standardized eight-hour work period.

Noise levels are expressed as TWA in decibels (dB). To comply with OSHA standards, a noise survey must be conducted to provide a Time-Weighted Average (TWA) value of 85dB or less. Anything above that requires action by the employer to provide proper hearing protection. A dosimetry survey alone will not provide a TWA value. The collected data must be processed using the R8086 PC software.

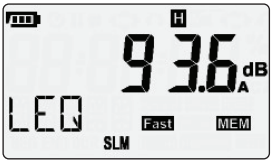
Noise Dose Measurement Procedures

1. Attach the microphone to the worker's shoulder or lapel within the hearing zone (approximately 4–12 inches (10–30cm) from the ear).
2. Ensure the microphone diaphragm faces outward and is unobstructed.
3. Secure the cable to prevent movement noise.
4. Instruct the worker not to touch or cover the microphone.
5. Install the windscreen when air movement exceeds 10WW.
6. Press the POWER ON/OFF button to turn the meter on.
7. The LCD will display the SPL (Sound Pressure Level) icon.
   - If SLM appears on the lower line of the display, press the **SET** button. If NDM is visible, proceed to step 8.
   - Press the ▼ button to change SLM to NDM.
   - Press the ENTER button to exit Setup Mode.
8. Press the START/PAUSE button to begin Noise Does testing.



   - Press the Start/Pause button again to pause testing.
   - Press Stop button to end the test.
9. Press the ▶ button to scroll through the available test parameters: SPL, Dose%, LPMAX, LPMIN, PKMAX, LEQ, SEL, LEP8, TWA8, LVAG, LN5%, LN10%, LN50%, LN90%, and LN95%.
10. Press the ◀ button to display the recorded start time of the measurement.
11. Press the ENTER button again to toggle between the start time and start date.
    - Time format: HH:MM:SS
    - Date format: DD-MM-YY

View Logged Sound Level Readings (SLM Mode)

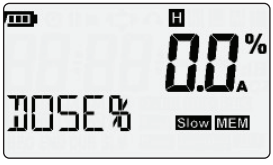


1. Press and hold the RECORD/VIEW DATA button for approx. 1 second to enter the Viewing Logged SLM Readings mode.

Note: This feature cannot be accessed while in recording mode.

2. Press the ▲ or ▼ button to scroll through the stored readings.
3. Press the ◀ button to view the test start time.
   - Time format: HH:MM:SS
4. Press the ENTER button to view the test start date
   - Date format: YY-MM-DD
5. Press and hold the RECORD/VIEW DATA button for approx. 1 second to exit Viewing Logged Readings mode.

View Logged DOSE readings



Note: For a detailed analysis of dose measurements, it is recommended to review the data using the software interface.

1. For DOSE noise readings, SLM must not appear on the lower line of the display.
2. If SLM appears, enter Setup Mode and change the mode to NDM.

continued…

3. Press and hold the Record/View Data button for approx. 1 second to enter Logged Data Viewing Mode.
4. Press the ▲ or ▼ button to scroll through the stored DOSE recordings.
5. Press the ▶ button to select the dose test parameter: SPL, Dose%, LPMAX, LPMIN, PKMAX, LEQ, SEL, LEP8, TWA8, LVAG, LN5%, LN10%, LN50%, LN90%, and LN95%.
6. Press the ◀ button to view the test start time.
   - Time format: HH:MM:SS
7. Press the **ENTER** button to view the test start date
   - Date format: YY-MM-DD
8. Press and hold the RECORD/VIEW Data button for approx. 1 second to exit Viewing Logged Readings mode.

Battery Replacement

When the low battery icon appears on the LCD display, the battery must be replaced.

1. Turn the meter OFF.
2. Remove the battery cover screw.
3. Remove the rear battery cover.
4. Remove the battery from the battery compartment.
5. Insert a new 9V alkaline battery, ensuring correct polarity.
6. Reinstall the battery cover and tighten the screw securely.

Note: Remove the battery if the meter will not be used for an extended period of time to prevent potential battery leakage.

Applications

- Personal accumulated noise exposure
- Construction sites
- Ensuring safe working conditions
- Code enforcement
- Traffic
- Recording of acoustic levels for environmental impact studies

Accessories and Replacement Parts

- **R8090** Sound Level Calibrator
- **REED-WB2** Windshield Ball for Sound Level Meters
- **CA-52A** Small Soft Carrying Case
- **R8888** Medium Hard Carrying Case

Don't see your part listed here? For a complete list of all accessories and replacement parts visit your product page on www.REEDInstruments.com.

Product Care

To keep your instrument in good working order we recommend the following:

- Store your product in a clean, dry place.
- Change the battery as needed.
- If your instrument isn't being used for a period of one month or longer please remove the battery.
- Clean your product and accessories with biodegradable cleaner. Do not spray the cleaner directly on the instrument. Use on external parts only.

Software User Guide

Introduction

The R8086 Software enables communication between the Noise Dose Meter and a PC via USB connection.

The software allows users to:

- Download Sound Level (SLM) logs
- Download Noise Dose (NDM) reports
- Configure meter settings
- Generate charts and printable reports
- Export data files
- Erase stored memory

This guide provides an overview of the software interface and its primary functions.

Software Installation

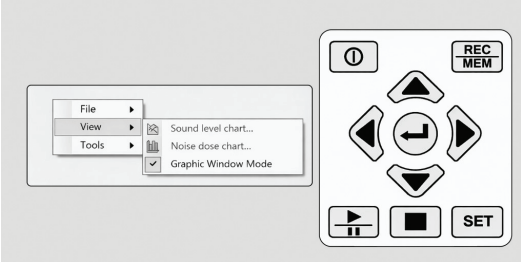
1. Visit: www.REEDInstruments.com/software
2. Download the R8086 Software.
3. Extract the downloaded file and run the installer.
4. Follow the on-screen installation prompts.
5. Connect the meter using the supplied USB cable.

For the latest compatibility and updates, visit: www.REEDInstruments.com.

Operating instructions

Graphic Window Mode

Right-click on the image and choose VIEW and uncheck Graphic Window mode for full view.



Software Interface Overview

Main Toolbar Functions

The main toolbar provides the following functions:

- Open File
- Print Noise Dose Report (*.ndr)
- Noise Dose Chart (LN%)
- Start / Stop Sound Level Logging (*.csv)
- Download Sound Level Logs
- Download Noise Dose Reports
- Erase Data Stored in Meter
- Options
- Automatic Port Detection

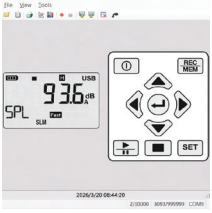
continued…

When the meter is connected via USB, the software automatically detects the communication port.

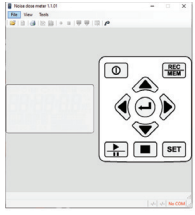
	Open file
	Print noise dose report (*.ndr)
	Noise dose chart (LN%)
	Stop to log sound level
	Erase measured data stored in meter
	Options
	Sound level chart
	Start to log sound level (*.csv)
	Download sound level logs; Download noise dose report
	Auto-detect meter connection port

Setup and Configuration

1. Connect the meter to your computer using the provided USB cable.
2. Open the Noise Dosimeter/Datalogger software.
   - The software should automatically detect and connect to the meter.
   - If it doesn't connect, check that the cable is secure and the meter is powered on.

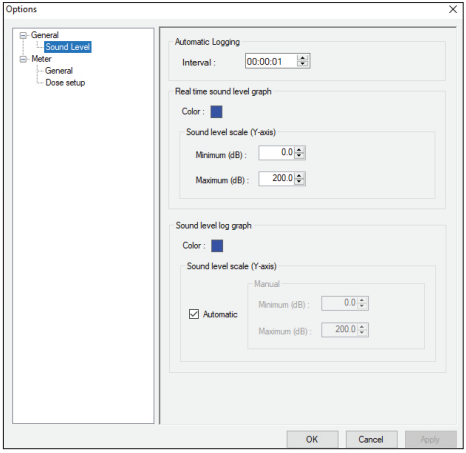


Connected



Not Connected

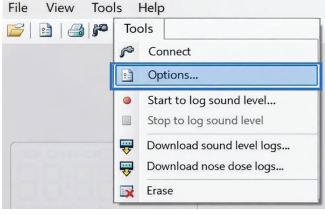
3. Go to Tools -> Options -> General -> Sound Level.
    - Set the options as shown in the reference image.



Configure:

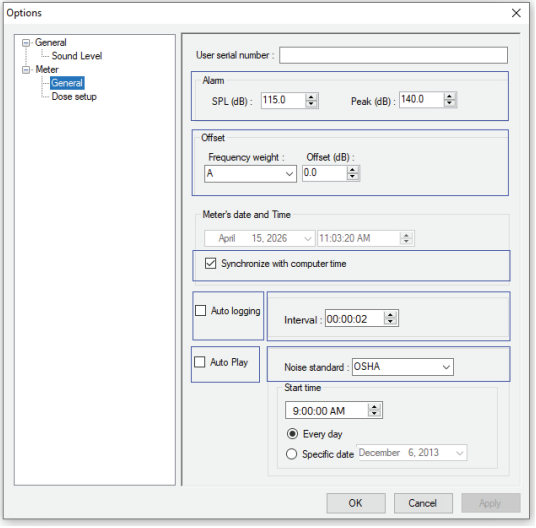
- PC data logger sampling time
- Graph display colors
- Graph Y-axis sound level range

4. Click Apply (if available), then OK. Otherwise, just click OK.
5. Go to Tools -> Options -> Meter -> General.



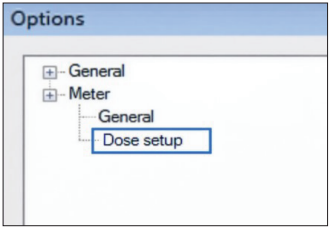
continued…

6. Set up the following parameters as needed:
    - Serial Number (up to 16 characters; 0–9, A–Z)
    - Alarm Settings
    - Offset Adjustment (±1.5dB)
    - Real-Time Clock
    - Auto Record (Enable or Disable)
    - Sampling Time
    - Auto Play Noise Dose (Enable or Disable)
7. If the Apply button is active, click Apply, then OK. Otherwise, just click OK.

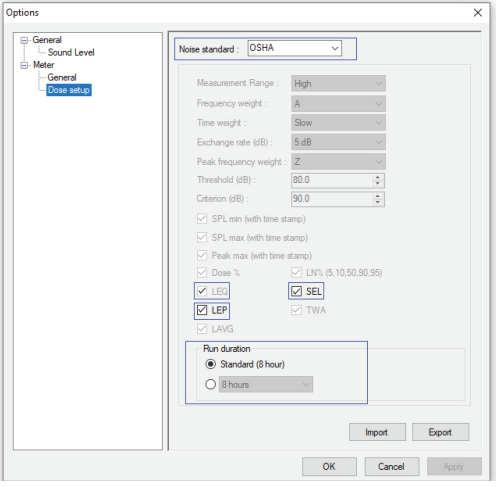


continued…

8. Next, go to Options -> Meter -> Dose Setup.



9. Set up the following parameters as needed:



10. Click Apply (if available), then OK. Otherwise, just click OK.

Note: Import / Export options are not available.

continued…

11. Close the software and disconnect the meter from the computer as the meter is now ready to perform a noise dose survey.

Starting the Survey

12. Press the **SET** button on the meter to switch to NDM mode (NDM will flash).
13. Press the Enter button to enter Noise Dose Survey Mode.
14. Attach the meter to the person being monitored (belt or shirt pocket works well). Clip the microphone to the collar or front of the shirt.
15. Press the Pause/Start button to begin recording. "REC" will flash, indicating the survey is active.
16. The individual can now continue their normal workday for the full 8-hour period.

Ending the Survey

17. After 8 hours, retrieve the meter.
18. Press PAUSE/START to pause the recording.
19. Press STOP to end the survey and save the data.

Important: Always press Pause and then Stop before turning off the meter. Failing to do this may result in loss of recorded data.

Viewing & Analyzing Data

Reconnect the meter to the computer and re-launch the software.

Opening Log Files

When opening a Sound Level log file, the following parameters may be displayed:

- SPL – Sound Pressure Level
- LEQ – Equivalent Continuous Sound Level
- SEL – Sound Exposure Level
- PeakMax – Maximum Peak Level

Available filters:

- Time Weighting: Fast / Slow / Impulse
- Frequency Weighting: A / C / Z

Additional functions:

- Calculate LEQ & SEL
- Save File As
- Graph Display

Mode : SPL	SPL -> LEQ -> SEL -> PeakMax
Time Weight: Slow	Fast -> Slow ->Impluse
Frequency Weight: A	A -> C -> Z
LEQ & SEL	Calculate LEQ & SEL
	Save file as…
	Graph

continued…

Graph View

The graph window allows users to:

- Zoom
- Drag (Pan View)
- Print
- Print Preview
- Print Setup

	Zoom
	Drag
	Print
	Print Preview
	Print Setup

Graph Controls & Reporting

Zoom Function

- Left-click to zoom in.
- Click again to return to original view.
- Click and drag to select a zoom area.
- Use "+" or "–" keys to zoom in or out.

Drag (Pan) Function

- Click and hold the left mouse button to move the viewing range.
- Hold CTRL + Left Click to adjust view and zoom simultaneously.

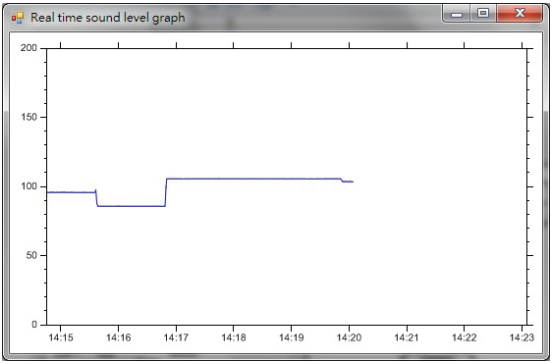
Sound Level Chart & Noise Dose Chart (LN%)

Sound Level Chart

The Sound Level chart provides a time-based graphical representation of measured sound levels.

- X-axis: Time (measurement duration)
- Y-axis: Sound Level (dB)

This chart allows users to visualize fluctuations in sound pressure level throughout the test period and identify peak events or trends.



Noise Dose Chart (LN%)

The Noise Dose chart displays statistical sound level distribution using LN% values.

- X-axis: LN% (statistical exceedance level)
- Y-axis: Sound Level (dB)

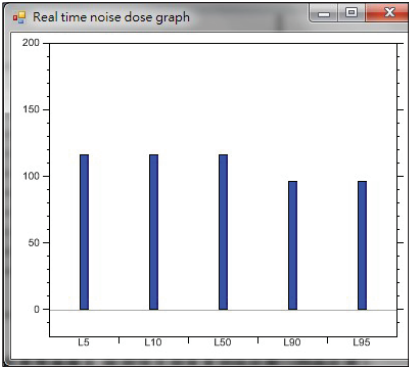
LN% represents the sound level exceeded for a specified percentage of the total measurement time.

For example:

- L10 – Sound level exceeded 10% of the measurement period
- L50 – Median sound level (exceeded 50% of the measurement period)
- L90 – Background noise level (exceeded 90% of the measurement period)

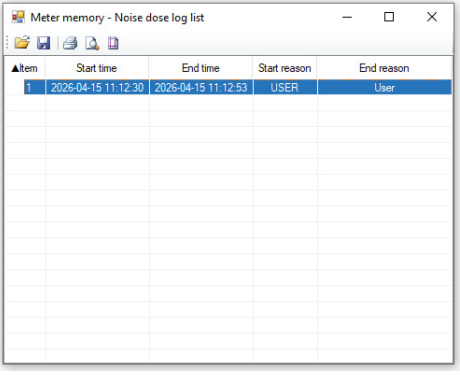
continued…

This chart is commonly used in occupational noise analysis and environmental noise assessment to evaluate noise exposure characteristics and background levels.



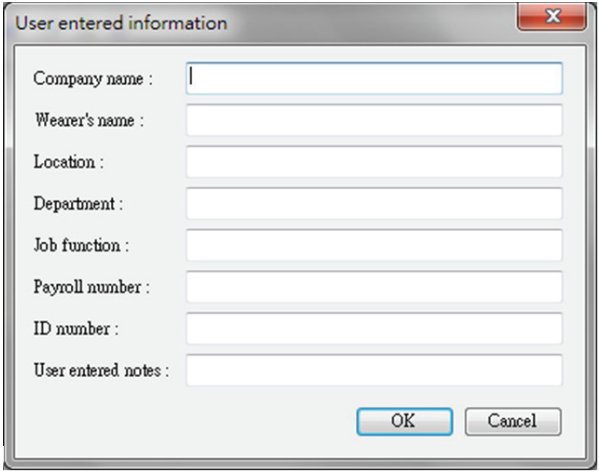
Printing Noise Dose Reports

1. Select a Noise Dose Report (*.ndr).



continued…

2. Click the Print icon.
3. Enter user information when prompted.



4. Click OK to generate the report.

Data Logging & Memory Management

PC Data Logging

To log data directly to the PC:

1. Click Start Data Logger.
2. Create a new *.csv file.
3. Click Stop to end logging.

Downloading Stored Data

Click the Download icon to retrieve:

- Sound Level Logs
- Noise Dose Reports

Note: Downloading up to 100K records may take approximately 15 minutes.

Erasing Stored Data

Click the Delete icon to erase all stored records from the meter.

Appendix A: Measurement Parameters

The following table explains the measurement parameters displayed on the meter.

Test Function	Screen Parameter	Description
SPL	LAFp	Sound Pressure Level (A-weighted, Fast)
SPL	LASp	Sound Pressure Level (A-weighted, Slow)
SPL	LCFp	Sound Pressure Level (C-weighted, Fast)
SPL	LCSp	Sound Pressure Level (C-weighted, Slow)
SPL	LZFp	Sound Pressure Level (Z-weighted, Fast)
SPL	LZSp	Sound Pressure Level (Z-weighted, Slow)
Leq	LAFq	Equivalent Continuous Sound Level (A-weighted)
Leq	LCFq	Equivalent Continuous Sound Level (C-weighted)
Leq	LZFq	Equivalent Continuous Sound Level (Z-weighted)
SEL	LAE	Sound Exposure Level (A-weighted)
SEL	LCE	Sound Exposure Level (C-weighted)
SEL	LZE	Sound Exposure Level (Z-weighted)
Peak	LCpeak	Instantaneous C-weighted Peak Level
Statistical Level	LN5%	Sound level exceeded 5% of the measurement period
Statistical Level	LN10%	Sound level exceeded 10% of the measurement period
Statistical Level	LN50%	Median sound level (exceeded 50% of the measurement period)
Statistical Level	LN90%	Background sound level (exceeded 90% of the measurement period)
Statistical Level	LN95%	Sound level exceeded 95% of the measurement period

Note: LN% values represent statistical noise levels indicating the sound level exceeded for a given percentage of the total measurement time.

Appendix B: Frequency Weighting Characteristics

A Weighting

The A-weighting curve is based on the 40-phon Fletcher–Munson Equal Loudness Contour.

It is recommended for assessing the effects of noise on human hearing and is commonly used for occupational noise measurements.

C Weighting

C weighting is recommended for monitoring machine noise and steady, low-frequency dominant sounds.

Z Weighting

Z weighting (Zero weighting) provides a linear frequency response and does not apply frequency filtering.

It is suitable for full-spectrum measurements and research applications, including electrical signal monitoring.

Appendix C: Sound Level Meter Class Description

- Class 0: Laboratory reference standard
- Class 1: Precision laboratory or field use
- Class 2: General laboratory or field use
- Class 3: General field use

Appendix D: USA Regulations - OSHA Regulation Conversion Charts

OSHA Permissible Noise Exposures Duration per day, hours	Sound level dBA, slow response
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
0.25 or less	115
Source: 29 CFR 1910 Table G-16	

For up-to-date information, please visit
https://www.osha.gov/dts/osta/otm/new_noise/#standards

Appendix E: Canada Regulations - Occupational Health and Safety Regulations, Occupational Exposure Limits

Table 1A Noise Exposure Limits when Criterion Level = 90dB(A)		
3dB(A) Exchange Rate	Maximum Permitted Daily Duration (hours)	5dB(A) Exchange Rate
Allowable Level dB(A)		Allowable Level dB(A)
90	8	90
93	4	95
96	2	100
99	1	105
102	0.5	110
105	0.25	115

Table 1B Noise Exposure Limits when Criterion Level = 85dB(A)		
3dB(A) Exchange Rate	Maximum Permitted Daily Duration (hours)	5 dB(A) Exchange Rate
Allowable Level dB(A)		Allowable Level dB(A)
85	8	85
88	4	90
91	2	95
94	1	100
97	0.5	105
100	0.25	110

Appendix F: Noise Exposure Limits, by Canadian Jurisdiction

Jurisdiction (federal, provincial, territorial)	Continuous Noise	
	Maximum Permitted Exposure Level for 8 Hours: dB(A)	Exchange Rate dB(A) +
Canada (Federal)	87	3
British Columbia	85	3
Alberta	85	3
Saskatchewan	85	3
Ontario	85	3
Quebec	90	5
New Brunswick	85	3
Nova Scotia	85	3
Prince Edward Island	85	3
Newfoundland and Labrador	85	3
Northwest Territories	85**	***
Nunavut	85**	***
Yukon Territories	85	3

** In Nunavut and Northwest Territories, the Occupational Health and Safety Regulations reference a staged action plan based on the dBA exposure level (80, 85, and 90).

*** In both territories, the Mining Health and Safety Regulations reference 3dBA. Please contact Northwest Territories and/or Nunavut for further information.

For up-to-date information, please visit https://www.ccohs.ca/oshanswers/phys_agents/noise_measurement.html

Product Warranty

REED Instruments guarantees this instrument to be free of defects in material or workmanship for a period of two (2) years from date of shipment. During the warranty period, REED Instruments will repair or replace, at no charge, products or parts of a product that proves to be defective because of improper material or workmanship, under normal use and maintenance. REED Instruments total liability is limited to repair or replacement of the product. REED Instruments shall not be liable for damages to goods, property, or persons due to improper use or through attempts to utilize the instrument under conditions which exceed the designed capabilities. In order to begin the warranty service process, please contact us by email at 1-877-849-2127 or info@reedinstruments.com to discuss the claim and determine the appropriate steps to process the warranty.

Product Disposal and Recycling

Please follow local laws and regulations when disposing or recycling your instrument. Your product contains electronic components and must be disposed of separately from standard waste products.

Product Support

If you have any questions on your product, please contact your authorized REED distributor or REED Instruments Customer Service by phone at 1-877-849-2127 or by email at info@reedinstruments.com.

Please visit **www.REEDINSTRUMENTS.com** for the most up-to-date manuals, datasheets, product guides and software.

Product specifications subject to change without notice.
All rights reserved. Any unauthorized copying or reproduction of this manual is strictly prohibited without prior written permission from REED Instruments.

Notes:

REED INSTRUMENTS

TEST & MEASURE WITH CONFIDENCE

Access Our Product Guide

www.REEDInstruments.com

1.800.561.8187 www.itm.com information@itm.com

REED INSTRUMENTS

www.REEDInstruments.com

1.800.561.8187 www.itm.com information@itm.com