

# REED

## Model R8080

Sound Level Meter/  
Data Logger

### Instruction Manual



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# Safety

Read the following safety information carefully before attempting to operate or service the meter. Use the meter only as specified in this manual; otherwise, the protection provided by the meter may be impaired.

- Repairs or servicing not covered in this manual should only be performed by qualified personnel.
- Periodically wipe the case with a dry cloth. Do not use abrasives or solvents on this instrument.
- Use the included Windscreen to eliminate wind blowing across the microphone, which can cause inaccurate readings.
- Calibrate this meter before use if it hasn't been used in a long period of time or if was previously under extreme conditions.
- Do not store or operate this instrument in high temperature or high humidity environments.
- Keep the microphone dry and avoid severe vibrations.

## Features

- Meets IEC 61672-1 Class 2 requirements
- Records up to 64,000 datapoints (1MB)
- 60dB dynamic space in each range
- Real time clock and calendar
- Fast/Slow time weighting
- “A & C” frequency weighting
- Min/Max function
- USB Interface
- Low level battery indicator
- Analog digital bargraph
- Backlit LCD display
- Tripod mount design for long-term monitoring
- Includes windscreen, USB cable, Windows software, batteries and hard carrying case

## Specifications

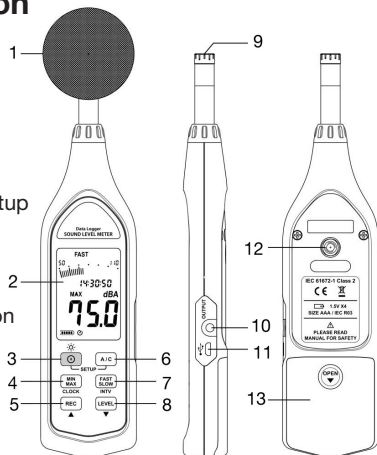
|                        |                                      |
|------------------------|--------------------------------------|
| Standard Applied:      | IEC61672-1 Class 2, ANSI S1.4 Type 2 |
| Frequency Range:       | 20Hz to 8KHz                         |
| Measuring Level Range: | 30 to 130dB                          |
| Frequency Weighting:   | A / C                                |
| Microphone:            | ½ inch electret condenser microphone |
| Digital Display:       | 4 digits                             |
| Analog Display:        | 30 segment bargraph                  |
| Resolution:            | Digital: 0.1dB<br>Analog: 2dB        |
| Sample Rate:           | Digital: 0.5 sec.<br>Analog: 50 mS   |
| Time Weighting:        | FAST and SLOW                        |

|                        |                                                                                |
|------------------------|--------------------------------------------------------------------------------|
| Level Ranges:          | Lo: 30 to 90 dB<br>Med: 50 to 110 dB<br>Hi: 70 to 130 dB<br>Auto: 30 to 130 dB |
| Accuracy:              | ±1.4dB (under reference conditions<br>at 94dB, 1KHz)                           |
| Dynamic Range:         | 60 dB                                                                          |
| Alarm Function:        | OVER and UNDER range alarm functions                                           |
| Data Logging:          | 64,000 records                                                                 |
| AC Output:             | 1 Vrms at FS (full scale)<br>FS: means the upper limit of each level range     |
| DC Output:             | 10mV / dB                                                                      |
| Power Supply:          | 4 x AAA, NEDA 24A, IEC LR03 Batteries                                          |
| Battery Life:          | Approx. 50hrs (alkaline battery)                                               |
| Operating Temperature: | 0 to 40°C (32 to 104°F)                                                        |
| Operating Humidity:    | 10 to 90%RH                                                                    |
| Storage Temperature:   | -10 to 60°C (14 to 140°F)                                                      |
| Storage Humidity:      | 10 to 75%RH                                                                    |
| Dimensions:            | 264 × 63 × 29mm (10.4 × 2.5 × 1.1")                                            |
| Weight:                | Approx. 245g (8.8oz)                                                           |
| Optional Accessories:  | R8090 Acoustic Calibrator<br>SB-01 Windshield Ball<br>BS-6 Tripod              |

For service on this or any other REED product or information on other REED products, contact REED Instruments at [info@reedinstruments.com](mailto:info@reedinstruments.com)

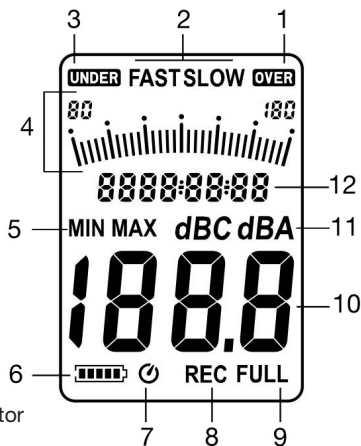
# Instrument Description

1. Windscreen
2. Display
3. Power / Backlight Button
4. MAX/MIN / Clock Button
5. Up / Record Button
6. Frequency Weighting / Setup Button
7. Time Weighting / Interval Button
8. Down / Level Range Button
9. Microphone
10. AC/DC Output Terminal
11. USB Terminal
12. Tripod Mounting Screw
13. Battery Cover



## Display Description

1. Over Range Indicator
2. Time Weighting Indicator
3. Under Range Indicator
4. Analog Bar Graph
5. Max/Min Indicator
6. Battery Capacity Indicator
7. Auto Power Off Indicator
8. Recording Indicator
9. Full Memory Indicator
10. Level Reading
11. Frequency Weighting Indicator
12. Date/Time



# Operating Instructions

1. Turn the meter on by pressing the Power Button. To turn the meter off, press and hold the Power Button.
2. Press the Time Weighting Button to select the desired Response Time. If the sound source consists of short bursts, set the response to FAST. To measure average sound level, select SLOW.
3. Press the Frequency Weighting Button to select the Frequency. Select “A” Weighting for a general noise sound level, or “C” Weighting for measuring sound levels of acoustic material. If the “C” Weighted Level is much higher than the “A” Weighted Level then there will be a large amount of low-frequency noise.
4. Press the Level Button to select the range. The ranges are “Lo”, “Med”, “Hi”, and “Auto.”
5. Point the Microphone towards the noise to take a measurement.

## *Max/Min Hold*

Press the MAX / MIN Hold Button to start taking Maximum and Minimum Measurements. Be sure to have the proper Level and Response selected before you enter Max/Min mode.

1. Press the Max/Min Hold Button once to show the MAX value.
2. Press the button again to show the MIN value.
3. Press the button again to record both the MAX and MIN measurements. The value on the screen is the current value.
4. Press and hold the Max/Min Hold Button to exit.

## *Auto Power Off*

By default, when the meter is powered on, it is under auto power off mode. The meter will turn itself off after 30 minutes of inactivity. Auto Power Off is deactivated while recording or when connected to a PC. To turn this function on and off, while the meter is turned off, press and hold the Interval Button, then turn the meter on.

## *Backlight*

Press the Backlight Button to turn the LCD Backlight on and off. The Backlight will automatically turn off after 30 seconds.

## *Setting the Date and Time*

The internal clock is run by an internal rechargeable battery. The battery is charged by the main unit's battery and will continue to run for 30 minutes after the main unit batteries have been removed or have run out.

1. While the meter is off, enter the SETUP mode by pressing and holding the Setup Button and turning the meter on.
2. "SEt" will appear on the LCD. Press the Clock Button to select the clock setting function.
3. Press the Up and Down arrows to adjust the year. Press the Clock button to save and move to the next values, which are Month, Day, Hour, Minute, and Second.
4. Press the Clock button again to save and exit Clock Setup. Press the Power Button at any time to cancel and exit.

## *Data Logging*

1. Turn the meter on and select the Response Time and Frequency Weighting for your measurements.
2. Press the Record Button to begin Data Logging the measured values.
3. Press the Record Button again to stop Data Logging. When the internal memory is full, the LCD will display "FULL".

## *Interval Data Logging Setup*

1. While the meter is turned off, press and hold the Frequency Weighting Button, and then turn the meter on.
2. Press the Fast/Slow button, and “Int” will appear on the screen, along with a flashing time value.
3. Press the Up and Down buttons to set the recording interval in minutes and seconds. A maximum value of 1 minute and minimum value of 1 second can be set.
4. Press the Interval Button to begin Interval Data Logging. Press the Power button to cancel at any time during setup and measuring.

## *Clearing Stored Data*

This will delete all internal memory. Be sure to download any records you wish to save before Clearing the memory.

1. While the meter is turned off, press and hold the Record Button.
2. Press and hold the Power Button for 5 seconds.
3. The LCD will display “CLr” and “SURE”, indicating the internal memory is cleared.

# Data Logging Software

|                            |                                                              |
|----------------------------|--------------------------------------------------------------|
| Included:                  | 1 x Installation CD<br>1 x Micro USB Cable                   |
| System Requirements:       | Windows XP / Vista / 7 / 8                                   |
| Minimum Hardware Required: | PC or NoteBook with CD-Rom<br>At least 50 MB Hard Disk Space |

## *Software Installation*

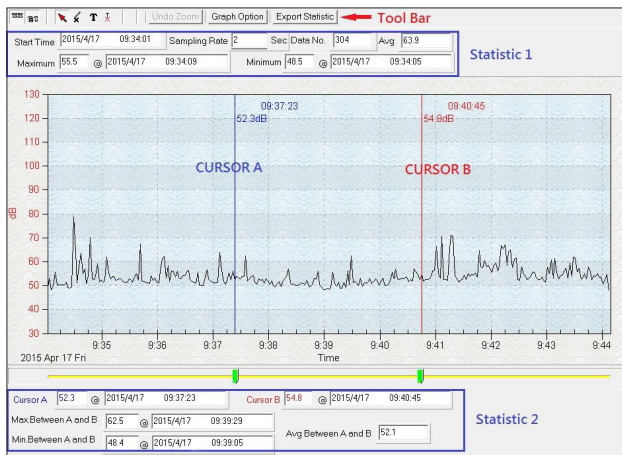
1. Insert the Software CD into the computer CD Disk Drive. Windows will run the “setup.exe” automatically. If it does not, click on the Start button and select “Run”. Type in “E:\SETUP” and click OK.
2. Follow the on-screen instructions to complete the installation. A copy of “SE323.exe” and help files will be saved onto your hard disk. The default location is “C:\Program Files\SE323”.

## *Main Menu*

|                         |                                                                                       |
|-------------------------|---------------------------------------------------------------------------------------|
| File > Open:            | Retrieve Files                                                                        |
| Save:                   | Save the active window data to file                                                   |
| Print:                  | Print the graph on the active window                                                  |
| Printer Setup:          | Select your printer                                                                   |
| File > Exit:            | Close the Software                                                                    |
| View > Control Panel:   | Opens the Control Panel Window where you can control the meter via the computer       |
| View > Real-Time Graph: | Opens the Real-Time Graph display which graphs the present data                       |
| Real-Time Data > Run:   | Start collecting real time data                                                       |
| Stop:                   | Stop collecting real time data                                                        |
| DataLogger:             | Opens the DataLogger Window where you can load recorded data from the meter to the PC |

## Graph Layout

See image below for placement reference for the Tool Bar, Statistic 1 & 2, and Cursor A & B. Double click the graph to open the Option Dialog where you can customize the graph style.



## Tool Bar



Display or Hide Statistic 1



Display or Hide Statistic 2



Select the Normal Cursor



Graph Marker



Graph Annotate

## Graph Cursor Overview

The graph has two vertical lines called CURSOR A and CURSOR B. The time and measurement value is displayed on the top and right side of each cursor. While the Normal Cursor is selected, click and drag CURSOR A or B and to move it left or right. Right below the main graph is a slider. You can also click and drag the slider to move the Cursors as well.

Below the slider are statistic, that display the start time, sampling rate, data number, maximum, and minimum of the graph. The statistic also displays the maximum, minimum, and average between CURSOR A and B and will update automatically when they are moved.

## Graph Zoom

You can choose a rectangle area on the graph to zoom in for detail.

1. Press the left mouse button and drag the cursor to select the new extents.
2. Release the mouse button.
3. To undo the Zoom, right click on the graph and select Undo Zoom in the pop-up menu.

## Loading Records

1. Turn the meter on and connect it to a PC.
2. Open the Data Logging Software.
3. Select "DataLogger" from the Main Menu or click on the  button on the Tool Bar.
4. A progress bar will appear (if an error occurs, press the button again).
5. The left side of the screen will show how many data sets were loaded and detailed information on each.
6. The first data set will appear on the graph and tabulate on the right hand side when you click on another data set.

## Quick Start Guide

### *Recording Real Time Data in Waveform*

1. Turn the meter on and connect it to a PC.
2. Open the Data Logging Software.
3. If the connection was successful the computer will display the same value as the meter. If it fails to connect the PC will display "No Connection".
4. When the connection is successful, click on the Play Button to start recording real-time data. The graph will display a waveform.
5. Click on the Stop Button to stop recording.

### *Save Recorded Data*

1. Click on the graph window you want to save, making it the Active Graph.
2. Select "File > Save" from the Main Menu, or click on the Diskette Icon from the Tool Bar.
3. A Save Dialog Window will appear for you to name and choose the file type.
4. There are three file types to choose from: Binary (\*.ghf), Text Tab Delimited (\*.txt), and Comma Delimited (\*.csv). The Binary files take less disk space, but can only be used in the Data Logging Software. The Text Tab Delimited file has the data separated by tabs and can be opened by a word processor program. The Comma Delimited file has the data separated by commas and can be opened by Excel only.

## *Frequently Asked Questions*

**1. How can I save the Graph so it can be used in Excel?**

**Answer:** Select the Excel file format (\*.CSV) when saving. Open the file in Excel and select “File > Save As” and change the file type to Excel.

**2. How do I un-install the Data Logger Software?**

**Answer:** Launch the Add/Remove Programs applet out of the Control Panel, highlighting the SE323. Click on the Add/Remove button to remove the SE323 folder and files from your computer.

**3. How do I Zoom in the Graph?**

**Answer:** Press the left mouse button and drag the cursor to select the new extents, and then release the mouse button.

**4. When I setup the Real Time sampling with a fast rate, some of the sampling data got lost!**

**Answer:** This might be caused by a slow response time on your PC.

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# Calibration Procedures



1. While the meter is off, press and hold the MAX / MIN Button.
2. Power on the meter, and CAL 94dB will appear on the display.
3. Insert the microphone carefully into the calibrator.
4. Press the Up and Down Buttons to increase and decrease the number on the display.
5. Press the MAX / MIN Button to finish. To abort during a setup process press the Power Button.

## Battery Replacement

When operating the unit on batteries, periodically check the Battery Indicator on the display. When there are no more bars on the Battery Indicator you will need to replace the batteries. Simply remove the battery cover on the back and insert four new AAA (1.5V) Batteries.

