

# CR:260 Series

calibrate > start > measure > stop > review

 **Cirrus**  
Research plc  
dedicated to noise measurement



# Sound Level Meters

## Introduction

The CR:260 Series is a range of Sound Level Meters that are suitable for a wide range of applications.

From Noise at Work Risk Assessments to Vehicle Noise Testing to Environmental Noise Measurements, the CR:260 Series provides a solution.

The instruments have been designed to be simple to use whilst meeting the latest Standards for Sound Level Meters.

Available with Class 1 or Class 2 accuracy along with the options of Octave Band Filters and a Data Logging upgrade, there is an instrument to meet your noise measurement needs.

Reliable, accurate and affordable, the CR:260 Series are the ideal instruments for your noise measurement applications.

## Key Features

- > Simple operation with single function buttons
- > Complies with the latest IEC 61672 standard as well as IEC 60651 and IEC 60804 for compliance with noise measurement standards
- > Available with Class 1 or Class 2 accuracy
- > Octave Band Frequency Analysis (CR:264 & CR:263) to help in the selection of hearing protection (PPE)
- > +Version upgrade adds Data Logging, the ability to download measurement to a PC and additional noise measurement functions such as  $L_{10}$ ,  $L_{90}$  and  $L_{AE}$  (SEL)
- > AC Output for use with external analysis and recording equipment
- > CR:261S Sound Level Meter available for Vehicle Noise Testing to ISO 5130:1982 & §29 StVZO with PTB Type Approval - Refer to the CR:261S Datasheet for further information
- > 2 Year standard warranty with 10 year extended warranty giving you up to 12 years of cover

## Noise at Work

- > Simultaneous measurement of  $L_{AF}$ ,  $L_{Aeq}$ ,  $L_{AFmax}$  and  $L_{Cpeak}$
- > Time history of noise levels
- > Risk Assessment of Workplace Noise Levels
- > Ideal for noise measurements in accordance with the Noise at Work Regulations and EU Directive 2003/10/EC
- > Measurements for the selection of hearing protection with CR:264 & CR:263 using Octave Band Filters
- > Calculate Noise Exposures with the Deaf Defier Software and create measurement reports (+Version)



> CR:262  
Class 2 Sound Level Meter



> CR:261  
Class 1 Sound Level Meter

## Environmental Noise

- > Boundary noise measurements
- > External noise impact assessments
- > Machinery noise testing
- > Motorsport noise measurements
- > Entertainment noise
- > Time History reports with the +Version Upgrade



## Industrial Noise

- > R&D noise measurements
- > Production line noise testing
- > Quality control
- > Sound power measurements
- > Fire alarm testing



## Features of the +Version

All of the CR:260 Sound Level Meters can be upgraded to the +Version which unlocks the additional functions of the instruments. The main features of the +Version are:

- > Up to 100 Measurements stored in memory with 1 second Time History
- > Download Measurements to a PC and the Deaf Defier 3 Software
- > User selectable Frequency Weighting (A, C or Z) & Time Weighting (F,S or I)
- > Measurement of  $L_n$  levels & Sound Exposure Levels ( $L_{AE}$ )



>CR:264

Class 2 Sound Level Meter with 1:1 Octave Bands



>CR:263

Class 1 Sound Level Meter with 1:1 Octave Bands

## Upgrading to the +Version

To upgrade to the +Version, a unique upgrade key must be purchased which will unlock the extra functions of the instrument.

This unique number is entered into the Deaf Defier 3 software which then unlocks the instrument.

The upgrade can be carried out by the user without the need for the instrument to be returned.

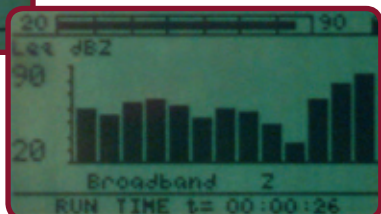
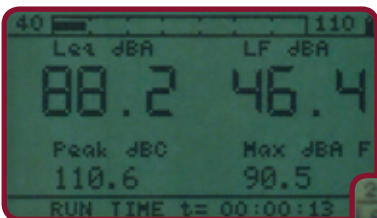
Contact Cirrus Research plc or your local representative for further details of upgrading the CR:260 Series to the +Version.

## Software Support for the +Version

If the CR:260 Sound Level Meter has been upgraded to the +Version, measurements that have been made and stored in the memory can be downloaded to the Deaf Defier 3 software.

This program allows the measurements to be presented as reports and all of the parameters viewed for analysis. In addition, the configuration of the instrument can be changed as required.

Please visit the Cirrus website for more information.



## Measurement Kits

All versions of the CR:260 Series can be supplied as a complete measurement kit. The kit includes the following parts:

- >CR:260 Series Sound Level Meter
- >CR:514 or CR:515 Acoustic Calibrator
- >UA:237 Windshield
- >CK:250 Carrying Case
- >User Manuals, Certificates of Calibration & Batteries

If the Sound Level Meter has been upgraded to the +Version, the measurement kit will also include an RS232 Cable and a USB Adaptor to connect to a PC and the Deaf Defier 3 Software, along with the upgrade code.



## Ordering Information

### Instrument Only:

- >CR:262 Class 2 Sound Level Meter
- >CR:261 Class 1 Sound Level Meter
- >CR:264 Class 2 Sound Level Meter with 1:1 Octave Band Filters
- >CR:263 Class 1 Sound Level Meter with 1:1 Octave Band Filters

### Measurement Kits

- >CK:262 Integrating Averaging Class 2 Sound Level Meter
- >CK:261 Integrating Averaging Class 1 Sound Level Meter
- >CK:264 Class 2 Sound Level Meter with 1:1 Octave Band Filters
- >CK:263 Class 1 Sound Level Meter with 1:1 Octave Band Filters

### +Version Data Logging Upgrade

- >MO:260/1 Upgrade to +Version with Data Logging

Other options and accessories may be available for the CR:260 Series. Please contact Cirrus Research plc or your local representative for a full list of the options and accessories available.

The Deaf Defier3 Software is supplied with no licensing restrictions. Updates can be downloaded from the Cirrus Research plc website.

All Cirrus Research plc Sound Level Meters, Noise Dosemeters and Acoustic Calibrators are supplied with a standard 2 year warranty and an extendable 10 year warranty.

## Applicable Standards

IEC 61672-1:2002 Class 1 or 2 Group X  
IEC 60651:2001 Type 1 I or Type 2 I  
IEC 60804:2000 Type 1 or Type 2  
ANSI S1.4 with NK:70 Random Incidence Adaptor Fitted  
1:1 Band Filters to IEC 61260 Class 1 (where fitted)

## Microphone

Class+ Pre-polarized Free-field 1/2" Condenser  
Random Incidence to ANSI S1.4 with NK:70 Adaptor

## Microphone Preamplifier

Class 1 MV:200C Removable Preamplifier, Class 2 MV:200C Integral Preamplifier

## Time Weightings

'F' (Fast) to IEC 61672-1:2002 Class 1 or 2

### + Version also provides

'S' (Slow) & 'I' (Impulse) to IEC 61672-1:2002 Class 1 or 2

## Frequency Weightings

Channel 1 'A', Channel 2 'C' for Peak

+ Version also provides 'A', 'C' or 'Z' for Channel 1, Channel 2 'C' for Peak

## Frequency Bands Nominal Frequencies (CR:264 & CR:263 only)

1:1 Octave Band Filters - 31Hz to 16kHz

## Measurement Range (Typical)

Broadband	24dB(A) to 140dB(A) Class 1, 26dB(A) to 140dB(A) Class 2 143dB(C) Peak (70 to 140dB Range)
1:1 Octave Bands	15dB to 140dB (1kHz 1:1 Octave Band)

## Noise Floor (Typical)

Broadband	21dB(A) Class 1, 23dB(A) Class 2
1:1 Octave Band Filters	15dB(Z) @ 1kHz 1:1 Octave Band

## Available Measurements

### Broadband Mode:

$L_{AF}$  Sound Level (Not Stored), dB(A), Fast Time Weighting  
 $L_{Aeq}$  Equivalent Continuous Sound Level, dB(A)  
 $L_{AFmax}$  Maximum Sound Level, dB(A), Fast Time Weighting  
 $L_{AFmin}$  Minimum Sound Level, dB(A), Fast Time Weighting  
 $L_{Cpeak}$  Peak Sound Pressure, dB(C)  
Measurement Duration

### 1:1 Octave Band Mode:

Selected Frequency,  
Filtered  $L_{ZF}$  (Not stored), dB(Z), Fast Time Weighting  
Filtered  $L_{Zeq}$  Equivalent Sound Level for each Octave Band  
 $L_{Aeq}$ ,  $L_{Ceq}$  &  $L_{Zeq}$  Equivalent Sound Level  
Measurement Duration

+ Version also allows the following measurements to be made

### Broadband Mode:

$L_{XY}$  Sound Level (Not Stored)  
 $L_{Xeq}$  Equivalent Continuous Sound Level  
 $L_{XYmax}$  Maximum Sound Level     $L_{XYmin}$  Minimum Sound Level  
 $L_{Cpeak}$  Peak Sound Level     $L_{XF}$ ,  $L_{Xeq}$  or  $L_{XFLeq}$   
 $L_{Xn}$  (0.1 to 99.9) Five Simultaneous values  
Date & Time of measurement     $L_{Xeq}$  Short Leq Time History

Where X= dB(A), dB(C) or dB(Z) Frequency Weighting.  
Y = Fast(F), Slow(S) or Impulse(I) Time Weighting

## 1:1 Octave Band Mode:

Selected Frequency  
Filtered  $L_{ZF}$  (Not stored), dB(Z), Fast Time Weighting  
Filtered  $L_{Zeq}$  Equivalent Sound Level  
 $L_{Aeq}$ ,  $L_{Ceq}$  &  $L_{Zeq}$  Equivalent Sound Level  
Measurement Duration  
Date & Time of Measurement

## Measurement Storage

The Last measurement is stored.

### + Version also provides

100 broadband or 1:1 Octave Band measurements  
Short Leq Time History ( $L_{Aeq}$ ,  $L_{Ceq}$  or  $L_{Zeq}$ ).  
Up to 24 hours at 1 second

## Automatic Measurements (+ Version Only)

The unit can be set to record and store data over fixed times of:

1 minute	5 minutes	10 minutes	15 minutes
30 minutes	1 hour	8 hours	12 hours

or a user defined period

## Display

Graphical LCD with Quasi-Analogue Display  
Selected measurement parameter with level  
Warnings for Overload, Under Range & Battery Level  
Time & Frequency Weighting    Elapsed measurement time  
Real time short Leq (broadband mode)    Graphical 1:1 Octave Bands  
Recalled Last Measurements    Measurement Range  
Instrument settings

Dimensions	Type 1 340mm x 75mm x 25mm Type 2 300mm x 75mm x 25mm
------------	--

Weight	450 gms
--------	---------

Power	2 x 1.5v Alkaline LR6/AA
Battery Life	Broadband Mode Typically >24 hours 1:1 Octave Band Mode Typically >12 hours

## Environmental

Temperature	Operating -10°C to +50°C    Storage -20°C to +60°C
Humidity	Up to 95% RH Non Condensing

## Electromagnetic Performance

EN 55022:1998	EN 61000-4-2:1995	EN 61000-4-3:2002
EN 61000-4-8:1994		

External Connections (+ Version Only)  
RS232 via 8 pin mini Din socket

## Output Cables (+ Version Only)

Standard:	RS232 ZL:800 RS232 Cable
Optional:	ZL:101 USB to Serial Adaptor

## Software Support (+ Version Only)

Deaf Defier3 for Windows. (Version v3.2.0 or later)  
The Deaf Defier3 for Windows requires Microsoft Windows 98SE or later



Acoustic House, Bridlington Road  
Hunmanby, North Yorkshire, YO14 0PH  
United Kingdom  
Tel: 0845 23 0 2434 (Local Rate UK Only)  
+44 (0) 1723 891655  
Fax: +44 (0) 1723 891742  
Email: sales@cirrusresearch.co.uk  
Web: www.cirrusresearch.co.uk

Your Cirrus Distributor