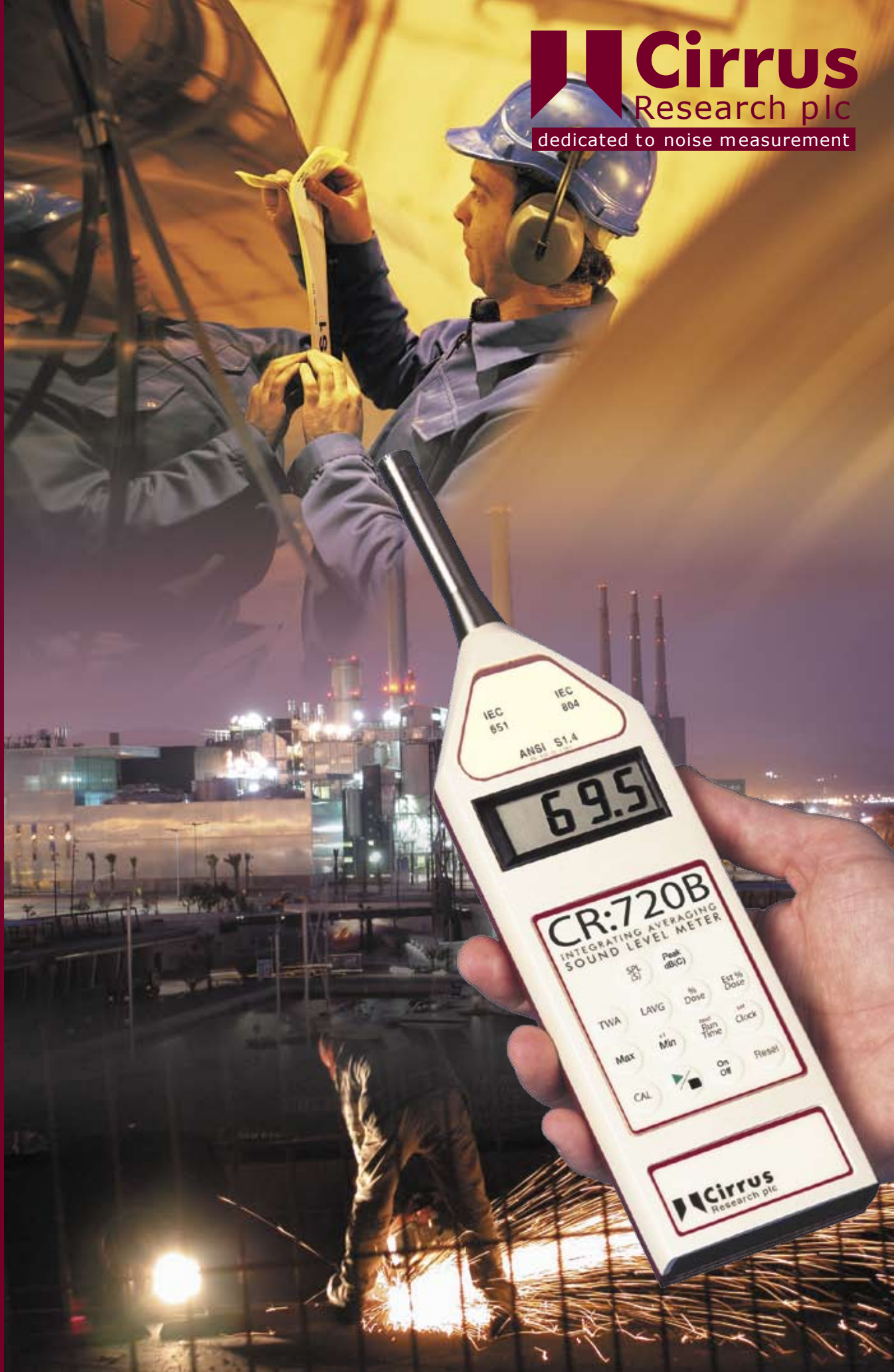


CR:720B



Sound Level Meter

Introduction

The CR:720B Sound Level Meter is a simple to use noise measurement tool that has been designed to meet the requirements of the OSHA occupational noise regulations and for use in areas where this method of noise exposure assessment is used.

The instrument provides a basic set of measurements which can be accessed by the keys on the front of the instrument, with the additional measurements provided when the Sound Level Meter is connected to a PC.

Applications

- > Occupational Noise Assessments
- > Environmental Noise Impact Measurements
- > QA & Product Development
- > Basic Noise Measurements & Inspections
- > Noise Ordinance Enforcement
- > Community Noise Assessment

The CR:720B provides for the measurement of TWA, L_{AVG} , % Dose and Estimated % Dose which can be used for the assessment of noise levels in line with the OSHA requirements.

The additional of the Peak(C), Maximum and Minimum functions allow the meter to be used where these extra functions are required.

If the measurement data is downloaded to a PC using the supplied software, the instrument will display the 2nd and 3rd data sets which are described below.

The CR:720B can also be used as a basic Sound Level Meter using the SPL(S) and Maximum functions.

Using the CR:720B Sound Level Meter

The CR:720B has been designed to be simple to operate. There are 14 keys on the instrument with each key having a single function.

The CR:720B can be used as a basic Sound Level Meter by pressing the SPL(S) button which displays the Sound Pressure Level at any time.

The instrument is calibrated by attaching an Acoustic Calibrator, usually a Cirrus CR:511E, to the microphone and pressing the CAL button.

Pressing the Start button begins a measurement and the Sound Level Meter will log the noise data and calculate the various parameters throughout the measurement period.

The user can press any of the measurement keys to show the data at that time. When the Stop button is pressed, the meter will store the data into the internal memory and up to 256 measurements can be stored.

From the keypad of the CR:720B Sound Level Meter, the user can display the following functions:

- > Measurement Duration
- > TWA, L_{AVG} , % Dose & Estimated % Dose
- > Maximum & Minimum Sound Level (L_{ASmax} & L_{ASmin})
- > Peak(C) Sound Pressure

The TWA, L_{AVG} , % Dose and Estimated % Dose functions are calculated using the requires of OSHA and use the following settings:

Exchange Rate: 5dB

Criterion Level: 90dB

Criterion Time: 8 Hours

Threshold: 80dB

Time Weighting: Slow

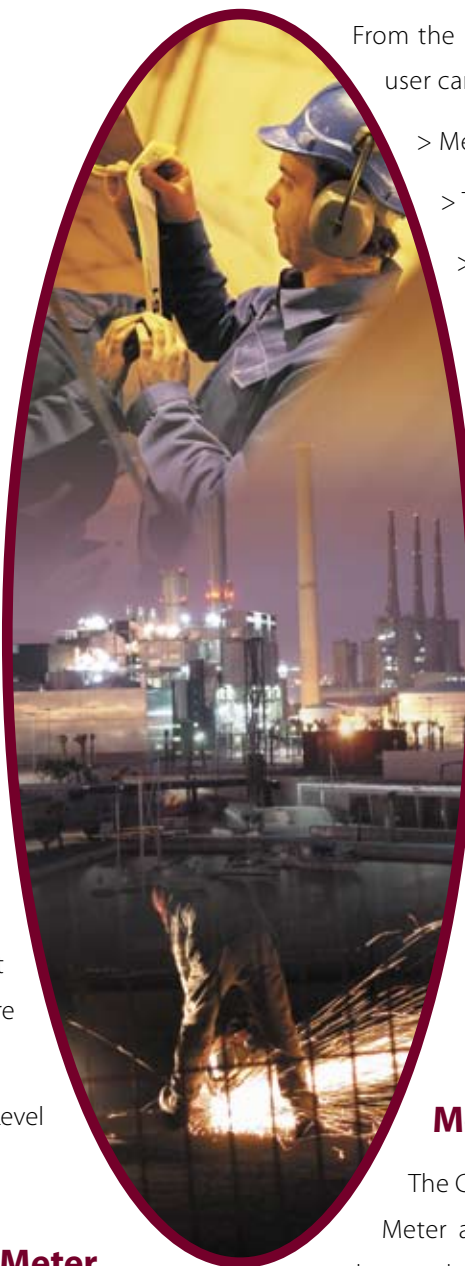
When making measurements using the CR:720B Sound Level Meter, the supplied NK:70 Random Incidence Adaptor must be used.

Measurements

The CR:720B is an Integrating Averaging Sound Level Meter and provides a range of noise measurements that can be used for compliance with a range of different Standards and Guidelines.

The CR:720B Sound Level Meter makes three sets of measurements, all of which run at the same time. These are known as Integrators 1, 2 & 3.

The measurement information provided by Integrator 1 is available directly from the keypad of the Sound Level Meter with the data from Integrators 2 and 3 available when the instrument



is connected to the software.

Integrator 1 is configured to provide the measurements required by the OSHA regulations, Integrator 2 is configured for OSHA HC measurements and Integrator 3 is configured to give Leq measurements.

Details of the different Integrators are shown below.

	Integrator 1 OSHA	Integrator 2 OSHA HC	Integrator 3 Leq
Exchange Rate (Q)	5dB	5dB	3dB
Criterion Level (CL)	90dB	85dB	85dB
Criterion Time (CT)	8 Hours	8 Hours	8 Hours
Threshold (TH)	80dB	80dB	None
Time Weighting (TW)	Slow	Slow	None

All three of the Integrators run at the same time, and are started and stopped using the Run/Stop key. When a measurement has been made, the keys on the instrument allow the user to see the data for Integrator 1.

The measurement data for Integrator 1 (OSHA) can be displayed by pressing the buttons on the keypad. The measurements for Integrators 2 and 3 can be viewed by downloading the measurement data to a PC using the supplied software.

The measurement data provided by each Integrators is as follows:

Integrator 1: OSHA

Measurement Time, L_{AVG} , TWA

% Dose & Estimated % Dose

Maximum Sound Level (L_{ASmax}) & Minimum Sound Level (L_{ASmin}),
Peak(C) Sound Pressure

Integrator 2: OSHA HC

Measurement Time, L_{AVG} , TWA

% Dose & Estimated % Dose

Maximum Sound Level (L_{ASmax}) & Minimum Sound Level (L_{ASmin}),
Peak(C) Sound Pressure

Integrator 3: Leq

Measurement Time, $L_{Aeq,t}$, $L_{EP,d}$

% Dose & Estimated % Dose

Maximum Sound Level (L_{ASmax}) & Minimum Sound Level (L_{ASmin}),
Peak(C) Sound Pressure

Software

The CR:720B Sound Level Meter is supplied with software to download measurements from the instrument to a PC. This simple software program allows the measurement data to be viewed and simple measurement reports created.

In addition, the measurement data can be exported in a range of format which can be used with other programs to create more comprehensive reports and analysis.

Measurement Kits

The CR:720B Sound Level Meter can be supplied as a complete measurement kit. The measurement kit contains the following items:

CR:720B Sound Level Meter

CR:511E Acoustic Calibrator

UA:237 Windshield

CK:250 Carrying Case

NK:70 Random Incidence Adaptor

User Manuals & Certificates of Calibration



Specifications

Applicable Standards

IEC 60651:1979 Type 2
IEC 60804:1984 Type 2
ANSI S1.43:1997 Type 2

Microphone

MK:216 1/2" Pre-polarised Free Field Electret Condenser

Microphone Preamplifier

MV:200C Integral Preamplifier

Time Weightings

'S' (Slow) to IEC 60651:1979 Type 2
Peak Detector < 50µs

Frequency Weightings

dB(A) for SPL & Integrated Metrics, dB(C) for Peak

Measurement Range

65dB(A) to 140dB(A) for SPL & Integrated Metrics
70dB(C) Peak to 143dB(C) Peak

Noise Floor (Typical)

<60dB(A), <67dB(C) Peak

Available Measurements

The CR:720B has three simultaneous measurements, Integrators 1, 2 and 3.
The data from Integrator 1 is available from the keypad of the instrument and this Integrator is configured to meet the requirements of OSHA.

Integrator 1: OSHA

L_{AVG} , TWA, Measurement Time
(Q=5, 90dB Criterion Level, 8 Hours Criterion Time, 80dB Threshold & Slow Time Weighting)
Maximum Sound Level ($L_{AS_{max}}$), Minimum Sound Level ($L_{AS_{min}}$)
Peak(C) Sound Pressure

In addition, the following functions are stored for Integrators 2 & 3 and this measurement data can be viewed when the instrument is downloaded to the software:

Integrator 2: OSHA HC

L_{AVG} , TWA, Measurement Time
% Dose & Estimated % Dose
(Q=5, 85dB Criterion Level, 8 Hours Criterion Time, 80dB Threshold & Slow Time Weighting)
Maximum Sound Level ($L_{AS_{max}}$), Minimum Sound Level ($L_{AS_{min}}$)
Peak(C) Sound Pressure

Integrator 3: 3dB (ISO)

$L_{Aeq,t}$, $L_{EP,d}$, Measurement Time
% Dose & Estimated % Dose
(Q=3, 90dB Criterion Level, 8 Hours Criterion Time, No Threshold, No Time Weighting)
Maximum Sound Level ($L_{AS_{max}}$), Minimum Sound Level ($L_{AS_{min}}$)
Peak(C) Sound Pressure

Memory

Up to 256 Measurement Records with each record containing data for Integrators 1, 2 & 3

Display

3½ Digit LCD Display
Display flags: Overload, Under-range, Battery Low, % Dose, Est % Dose

Dimensions

300mm x 75mm x 25mm
11.8" x 2.9" x 1"

Weight

450 gms

Batteries

1 x 9V batteries (6F22, PP3)

Battery Life

Typically >12 hours

Environmental

Temperature

Operating -10°C to +50°C
Storage -20°C to +60°C

Humidity

Up to 95% RH Non Condensing

External Connections

RS232 Communications to a 9 pin connector
Via 8 pin mini Din socket with supplied ZL:700 Cable

Software Support

dBLink software supplied as standard to download data from the CR:720B Sound Level Meter to a PC. RS232 Connection required to connect the CR:720B to a PC.

Electromagnetic Performance

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



Acoustic House, Bridlington Road
Hunmanby, North Yorkshire, YO14 0PH
United Kingdom

Tel: 0845 23 0 2434
+44 (0) 1723 891655
Fax: +44 (0) 1723 891742
Email: sales@cirrusresearch.co.uk
Web: www.cirrusresearch.co.uk

