

> CR:112A & CR:112AIS doseBadge Noise Dosimeter

- Simple & Easy to operate, ideal for use in mining and industrial environments
- Intrinsically Safe CR:112AIS version available with MSHA Approval
- Small size and low weight with a robust metal case to prevent damage
- No cables or controls on the doseBadge reduces the risk of damage, misuse, tampering and servicing costs
- Dual Channel OSHA/MSHA Measurements with simultaneous 80dB and 90dB Thresholds
- L_{AVG} TWA, % Dose & Estimated % Dose with 1 minute L_{AVG} Time History stored for each channel



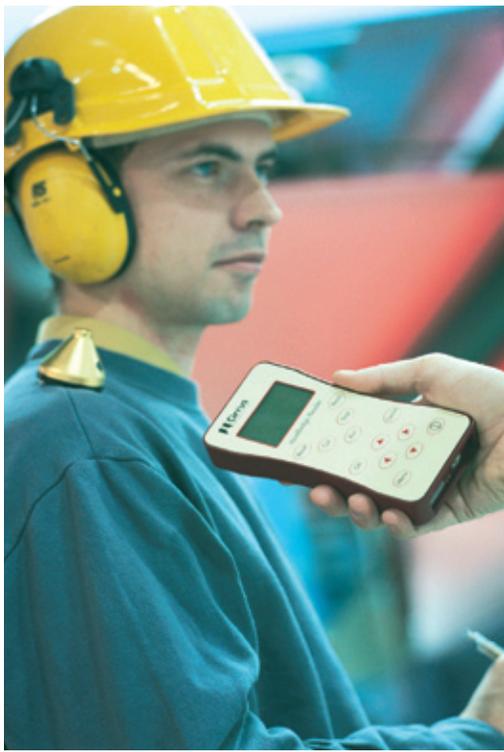
- Measurement range of 80dB to 140dB
- Maximum 2½ hour charging with CU:110A Charger with a typical battery life of 30 hours
- 117dB(A) L_{AS} Sound Level Exceeded Indicator
- Flashing Indicator to show 100% Noise Dose Exceeded



- Wireless Infra-Red download of measurements to the Reader Unit
- Measurements presented quickly and simply by the Reader Unit
- PC Software supplied as standard



> Simple Operation



The wireless features of the doseBadge are a significant upgrade to that of traditional style dosimeters, which use a microphone attached to a cable. The primary benefits are:

- > **D**urability
- > **O**peration that is easy
- > **S**afe
- > **E**rgonomic

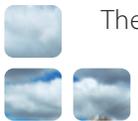
Durability: In harsh environments, durability of expensive equipment is always a concern. The doseBadge is completely encased in a metal housing which provides unrivaled protection for a dosimeter. Since the microphone is also inside the protective housing, the risk of damage to this expensive component is greatly reduced.

Fewer measurements will be lost due to damaged microphones as well as RF (Radio Frequency) interference. Furthermore, there is no display on the doseBadge, which eliminates the chance of damage to this costly element. With more than 15 years in the field, the doseBadge has been proven and perfected.

Operation: The system includes software that has been designed to be as simple to operate as possible. This should greatly reduce training time for field technicians.

Safe: Exposed cables attached to an employee are a nuisance. They can become trapped or caught, potentially damaging the equipment and even causing a potential safety hazard. With traditional dosimeters, the cable is often run underneath the employees clothing to protect the equipment. This can be an awkward request both for safety personnel as well as employees. Since the doseBadge has no cables, both the hazards and awkward requests are eliminated.

Ergonomic: Compared to traditional wired dosimeters, the doseBadge has a more ergonomic design. Employees are often resistant to any type of personal safety monitoring and often complain that the equipment is burdensome when performing their tasks. The small and unobtrusive size of the doseBadge can help alleviate these complaints. Employees familiar with both types of dosimeters have consistently expressed their desire to wear the doseBadge instead of a traditional wired dosimeter.

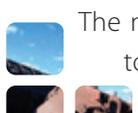
 The CR:112A series doseBadge provides for the Action Level and PEL measurements of the noise exposure using both 80dB and 90dB thresholds simultaneously according to MSHA/OSHA Regulations. This data is logged and sorted in the instrument for download and analysis, allowing the user to make quick and reliable assessments.

 Widely used in the mining, petrochemical and manufacturing industries, the doseBadge is an instrument that has a proven track record of use in tough and harsh environments.

> Intrinsic Safety (IS)

The CR:112AIS version of the doseBadge carries an MSHA Intrinsic Safety Approval (No. 18-A060027-0).

This version of the doseBadge is suitable for use in Hazardous Zones where an MSHA Approval is required such as underground coal and gassy underground metal mines.

 The noise measurements provided by the CR:112AIS and the method of use is identical to the standard CR:112A version and all of the unique features of the doseBadge are available from the CR:112AIS version.

 The CR:112AIS is identified by a gold coloured case and by the markings on the baseplate which indicate the MSHA Intrinsic Safety Approval.



> Noise Measurements

Dual Channel Measurements

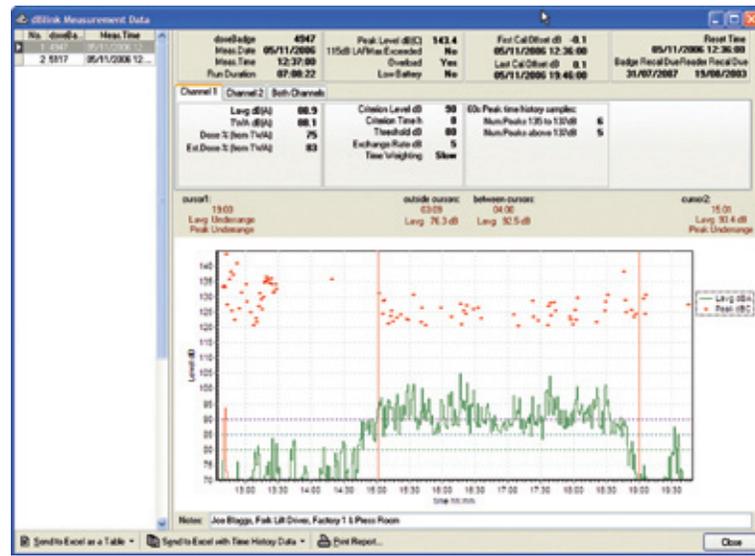
The CR:112A doseBadge is a Dual Channel instrument and can measure the noise exposure using both 80dB and 90dB Thresholds.

For each channel the instrument stores a complete set of noise measurement data including L_{AVG} , TWA, % Dose and Estimated % Dose. In addition to these measurements, for each channel the doseBadge also records a Noise Profile or Time History.

Sound Level Trigger Measurement

The doseBadge will record if the noise level exceeds 117dB L_{AS} (Slow 'A' Weighted Sound Level) and for how long the noise was above the 117dB L_{AS} level during the measurement.

Overall measurement data is also stored and this contains the configuration information, calibration data and battery status.



Visual Indication of 100% Noise Dose

When the doseBadge is running, the indicator flashes once a second. If % Noise Dose measured on Channel 1 exceeds 100% during the measurement, the indicator on the doseBadge will flash twice as fast.

> Measurement Kits



The doseBadge is often supplied as a complete measurement kit which includes all of the component parts needed to operate the system. This includes the doseBadge Reader unit, cables, power supply, charger, manuals and software.

The software supplied with the doseBadge, dLink3, is supplied without licensing restrictions and can be installed on any number of PC's.

In addition, updates to the software are available free of charge from the Cirrus Research plc website or from a local Cirrus Research plc distributor. The dLink3 software is compatible with Microsoft Windows XP, 2000 & Vista.

The operating manuals, quick start guide and reference guide, along with the dLink3 software, are available in a range of languages included English & Spanish.

> 12 Year Warranty

From the 1st March 2007, all Cirrus Research plc noise measurement equipment, including the CR:112A doseBadge, is supplied with a standard 2 year warranty.

This can be extended by a further 10 years if the equipment is serviced and recalibrated every 12 months by an Authorised Service & Calibration Centre.

In the US, Canada & Mexico this is provided by Occupational Health Dynamics, the exclusive Cirrus Research plc Distributor, Service & Calibration Centre for the US.



Applicable Standards

CR:112A & CR:112AIS doseBadge

ANSI S1.25:1991 Personal Noise Dosimeters
IEC 61252:1993 Personal Sound Exposure Meters

RC:110A Reader Unit

Internal Acoustic Calibrator to IEC 60942:2001 Class 2

Intrinsic Safety for CR:112AIS

MSHA No. 18-A060027-0

Measurement Range (Typical)

80dB(A) to 140dB(A) RMS
120dB(C) to 140dB(C) Peak

Measurement Functions

The CR:112A & CR:112AIS doseBadges the following measurement parameters:

Channel 1: L_{AVG} TWA, % Dose, Estimated % Dose
Channel 2: L_{AVG} TWA, % Dose, Estimated % Dose

Overall Measurement Data:

doseBadge Configuration Calibration Record,
Measurement Duration Highest Peak(C) Sound Pressure
Overload Exceedence Battery Status
117dB(A) LAS Exceeded Indicator
Total Duration of 117dB(A) LAS Exceeded

1 Minute Time History of L_{AVG} Peak(C) Sound Pressure & Battery Level

Visual Indication of 100% Noise Dose (Channel 1) Exceeded during measurement

Weightings

Frequency

'A' for all RMS measurements.
'C' for Peak Sound Pressure

doseBadge Configuration

The CR:112A & CR:112AIS doseBadges are configured with the following settings:

Channel 1	Exchange Rate: 5dB Threshold Level: 80dB Time Weighting: Slow	Criterion Level: 90dB Criterion Time: 8 hours
Channel 2:	Exchange Rate: 5dB Threshold Level: 90dB Time Weighting: Slow	Criterion Level: 90dB Criterion Time: 8 hours



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Memory

CR:112A & CR:112AIS doseBadges

The doseBadge can store up to 24 hours of data in a single measurement

RC:110A Reader

Up to 999 Individual doseBadge Measurements

Power

CC:112A & CR:112AIS doseBadge

Internal NiMH Battery. Typical Battery Life 30 hours @ 80dB

RC:110A Reader

2 x AA/LR6 with Auto Power Switch Off

CU:110A doseBadge Charger

Intelligent Fast Charging. Maximum 2½ hour charge time
Charges up to 5 individual CR:112A doseBadges

Output

CR:112A & CR:112AIS doseBadge

Wireless Infrared to RC:110A Reader Unit

RC:110A Reader

USB 2.0 to PC (which also provides power to the RC:110A Reader)

Dimensions

CR:112A doseBadge

Microphone Apex Ø13.0mm, Base Ø47mm, Height 38mm

Weight

CR:112A doseBadge	1.6oz (45gms)
CR:112AIS doseBadge	2.8oz (79gms)
RC:110A Reader	14oz (400gms)

Environmental

Temperature

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

Humidity

Up to 95% RH Non-Condensing

Software

dBLink3 for Microsoft Windows XP, 2000 & Vista



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