

Technical Specifications: CR110A/AIS



Technical specifications

Applicable Standards

IEC 61252:1993 Personal Sound Exposure Meters
ANSI S1.25:1991 Personal Noise Dosimeters Class Designation 2AS-90/80-5

Measurement Range (Typical)

70dB(A) to 130dB(A) RMS
120dB(C) to 140dB(C) Peak

Measurement Functions

The CR:110A doseBadge and RC:110A Reader Unit support Dual Channel measurements.

Overall Measurement Data

doseBadge Configuration
Calibration Record
Measurement Duration
Highest Peak(C) Sound Level
Overload Exceedence
115dB(A) Maximum Sound Level Exceedence
Battery Status

Channel 1 Measurement Data

For 3dB Exchange Rate

LAeq, LEX,8h, LAE, % Dose, Exposure (Pa2h)
Estimated % Dose, Estimated Exposure (Pa2h)

For 4dB & 5dB Exchange Rates (and configurations with Time Weighting or Threshold)

LAVG, TWA, % Dose, Estimated % Dose

1 Minute Time History of:

LAeq (3dB) or LAVG (4dB or 5dB)
Peak(C) Level
Battery Level

Channel 2 Measurement Data

LAeq, LEX,8h, LAE, % Dose, Exposure (Pa2h)
Estimated % Dose, Estimated Exposure (Pa2h)

Memory

The RC:110A Reader Unit can store the following measurement data:

With 8 hours of 1 minute Time History

Up to 93 measurements

With 12 hours of 1 minute Time History

Up to 64 measurements

With 24 hours of 1 minute Time History

Up to 33 measurements

Weightings

Frequency

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

Time

None or Slow

Exchange Rate

3dB, 4dB or 5dB

doseBadge Configuration

Channel 1: Independent User Configuration of:

Exchange Rate 3dB, 4dB or 5dB
Criterion Level 80dB, 85dB, 90dB
Criterion Time 8hrs, 12hrs, 16hrs, 18hrs
Threshold None, 80dB, 90dB
Time Weighting None, 'S' (Slow)

Channel 2: Preset to

Exchange Rate 3dB
Criterion Level 85dB
Criterion Time 8hrs
Threshold None
Time Weighting None

Casing

All variants made with robust aluminium or brass with stainless steel base.

Power

Internal NiMH Battery with intelligent charging system
90 minute (typical) charge time with 30 hours (typical) battery life

Output

doseBadge Infrared to RC:110A Reader Unit
Reader USB2.0

Dimensions

Microphone Apex 1/2" (12.7mm)
Base 47mm
Height 38mm

Environmental

Operating temperature -10°C - +50°C
Storage temperature -20°C - +60°C
Humidity Up to 99% RH
Non-Condensing

Weight

45 gms (1.6 oz)

Software

The NoiseTools data download, analysis and reporting software supplied as standard. Compatible with Microsoft Windows 7 or later.

Status Indicators

The badge has a blue indicating light which shows that the badge is running.

If an exceedance level is set on NoiseTools, detection of this level will cause the blue light to flash twice every second.

The green flashing light shows that the unit is on charge.

Once the battery is full the light will remain on constantly.



The doseBadge is also available with Intrinsic Safety certification, meaning it is safe to use in environments with potentially explosive atmosphere like those found in mining, petro-chemical plants, food manufacturing plants and on oil rigs. Below is a table that sets out the approvals our approved doseBadge models have.

Certification body	Group 1 non-mining applications	Group II mining applications
ATEX	CE Ex II 1G	CE Ex I M1
IECEX	IECEX BAS 06.0084 Ex ia IIC T4 (-20°C ≤ Ta ≤ +60°C)	IECEX BAS 06.0083X Ex ia I (-20°C ≤ Ta ≤ +60°C)
EEx	EEx ia IIC T4 (-20°C ≤ Ta ≤ +60°C)	EEx ia I (-20°C ≤ Ta ≤ +60°C)
FM	IS / I / 1 / ABCD / T4 Ta ≤ 60°C; Type IP54 I / O / AEx ia / IIC / T4 Ta ≤ 60°C; Type IP54	
MHSHA (CR:112AIS only)		MSHA Intrinsic Safety Approval (No. 18-A060027-0)

A version of the CR:110AIS is also available labelled with SIMTARS Approval to IECEX SIM 07.0004X - Ex ia I -20°C = Ta = +60°C

Ex Approval is in accordance with the ATEX Directive. Full details of the Intrinsic Safety Certification are available on the Cirrus Research plc website at www.cirrusresearch.co.uk/library#iscertificates

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*software capabilities are dependent on the functionality of your instrument

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