

The doseBadge

High-Performance Personal Noise Dosimeter

A smarter approach to personal noise monitoring

The doseBadge; Cirrus Research's next-generation personal noise exposure meter (also known as a noise dosimeter). Meeting the very latest IEC 61252:2025 Standard and built on the trusted doseBadge platform, the doseBadge measures an individual's noise exposure in the workplace and helps organisations comply with international health and safety regulations.

The doseBadge introduces a new digital MEMS microphone for more consistent results, offers options for trigger-based audio recording and octave-band data, and advanced Bluetooth advertising that streams live status and mid-shift data to the doseHub and MyCirrus app automatically.

With four independent integrator channels, a single instrument can measure any combination of international noise regulations.

Applications

- Personal noise exposure monitoring across manufacturing, construction, entertainment and consultancy.
- Measuring and controlling occupational noise exposure.
- Compliance with worldwide occupational health and safety regulations and standards.
- Remote and multi-site workforce monitoring via the cloud.
- Evidence gathering for noisy activities using audio triggers.
- Selection and verification of hearing protection.

Key Features:

- Four integrators and six always-on SPL max/min channels, for compliance with any combination of international regulations.
- Three always-on peak channels (A, C and Z weighted).
- New digital MEMS microphone for more consistent, temperature-stable results.
- 24 hours typical battery life.
- 35 15-second audio recordings, automatically triggered by exposure events.
- Options to add octave band data, for evidence-based hearing protection selection.
- Advanced Bluetooth advertising for live mid-shift data with no pairing required.
- Cloud connectivity for live access and view of completed measurements from anywhere.
- Automatic measurement recovery, even after power loss or damage.
- Flexible dock automation for auto-start/stop or scheduled measurements straight from the dock.
- Selectable LED behaviour (All, Minimal, Off) for a more discreet badge.
- Tough, metal enclosure for demanding environments.



Advanced Bluetooth Advertising

The doseBadge continuously broadcasts a compact status package (including current exposure, battery level and memory remaining) every few seconds. Any nearby receiver (such as a doseHub or the MyCirrus mobile app) can pick up this live data without connecting or pairing, making mid-shift checks fast and effortless.

doseHub: Your Gateway to the Cloud

The innovative doseHub is a compact receiver, powered by PoE or a mains adapter and connected via Ethernet or WiFi. It listens continuously for any doseBadge advertising within range and uploads data to the organisation's doseBadge portal, giving supervisors and Health & Safety officers real-time visibility of exposure across a site (or across multiple sites) from anywhere in the world.

- Configured in minutes using the MyCirrus Mobile app
- Built-in screen shows live status and error codes
- Remote start, stop, pause and resume of any badge in range, directly from the portal
- A small number of doseHubs is typically enough to cover a whole site. Placing them in high-traffic areas such as canteens and entrances maximises coverage.

doseBadge Portal: Live, from Anywhere

For every badge, the portal shows serial number, name and model, measurement status and duration, battery and memory level, docked status, assigned wearer, live dose/exposure, peak and octave data, and the time of the last update.

Audio Recording

The doseBadge can capture up to 35 audio recordings of 15 seconds each (including a 5-second pre-trigger) automatically triggered when a chosen integrator or peak channel exceeds a configurable level and duration.

This turns a single number into real evidence, helping teams understand the cause of an exposure event, rather than relying on memory alone.

- Configurable overwrite behaviour: none, oldest, or quietest recording
- Optional filtering to ignore suspected tamper/knock events

Hearing Protection Built In

Our licence-free NoiseTools software can apply hearing protection attenuation (using SNR, HML or full octave-band ratings from its built-in library, or a user-defined value) to show you live, protection-adjusted exposure. The dose warning LED can then be configured to trigger based on this assumed protection level, and the same figure is displayed in the doseBadge Portal and in NoiseTools during post-analysis, removing the need to manually check protection is adequate for the environment.



Technical Specification

Applicable Standards:

IEC 61252:2025 Personal Sound Exposure Meters
ANSI S1.25:1991 (R2007) Personal Noise Dosimeters

Measurement Range (typical)

RMS Range: 60dB(A) to 140dB(A)
Peak Range: 80dB(C) to 143dB(C)
RMS Frequency Weighting: A, C, or Z
RMS Time Response: F or S
Peak Frequency Weighting: A, C or Z
Linear Operating Range (A): 55dB(A) to 140dB(A)
Linear Operating Range (C): 58dB(C) to 140dB(C)
Linear Operating Range (Z): 60dB(Z) to 140dB(Z)

Visual Indication of Status

Four-colour LED to show status and activity

Measurement Functions

Simultaneous measurement of:

Four independent Integrator channels
Three independent Peak channels (A, C, Z)
Six SPL min and max channels (LAF, LSF, LCF, LCS, LZf, LZS overall)

Overall measurement data

Measurement duration
Start time and date
Instrument serial number and name
Calibration information (field and factory calibration)
Overload and tamper sensor detection

For each integrator channel

Average integrated sound level (Leq/LAVG)
Time weighted average (LEP,d/LEX, 8/TWA)
Sound exposure and estimated sound exposure
% dose and estimated % dose ULT duration

Time History Data

1 Second time history data

For each integrator channel

Integrated Sound Level (leq/LAVG)

Integrator Channels:

Channel name: pre-set or user-defined
Exchange rate: 3, 4, 5 or 6 dB
Criterion Level: 80dB to 100dB in 1dB steps
Criterion Time: 1 hr to 24 hrs in 1 hr steps
Threshold Level: None, 70dB to 100dB in 1dB steps

Time Weighting: Fast, Slow, or None

Frequency Weighting: A, C or Z

ULT Level: 70dB to 140dB in 1dB steps

Noise Threshold Exceeded Warning

Dose threshold trigger with user selectable channel and user selectable % from 75% to 100% set in 5% steps.
Configurable to use the assumed level based on the wearer's hearing protection.
Warning shown in the portal and as a red LED on the badge

Peak Channels

Frequency weighting: A, C and Z (all recorded)

Measurement Control

Manual

Start, stop, pause and resume

Automatic Scheduled Measurements

Timed start, pause and stop of measurements.
Up to 24 different timers (each start, stop, pause, resume counts as one).
Up to 3 pauses can be set (maximum 2 hr pause).
Days of the week can be selected and repeated.

Automatic Start Stop

Based on the badge's docked status
Configurable delayed start

Shock/Tamper Sensor

Internal accelerometer with
Off/Low/Medium/High sensitivity settings to detect impact and tampering. Detected impacts are marked on time history data in NoiseTools in red
A red LED can be configured to flash when a tamper event is detected

Calibration

Automatic detection of external acoustic calibrator.
User-configurable calibration level:
Default set to 94dB suitable for CR:514 acoustic calibrator.
Can be set to 114dB suitable for dual level CR:516 calibrator.

Memory

Up to 72 hours of Time History Data. Up to 40 individual measurements
Maximum duration of any single measurement is 24 hours.

Audio

24 kHz, 16 bit, up to 35 recordings consisting of 15 seconds each (including 5 seconds pre-trigger).

Audio triggers can be configured in NoiseTools. Configuration options for overwriting audio: disabled, oldest overwritten, lowest max level overwritten. Audio events from previous measurements can be overwritten if configured to do so.

Power

Internal Lithium Polymer (LiPo) Battery 3.7V 630 mAh.
Typical Battery Life on a full charge is 24 hours.
Typical 3 hours charge time from empty to approx. 90%
Charging should be carried out where the ambient temperature is between 18°C and +35°C (+65°F to +95°F)

Communication

Bluetooth
USB via the doseBadge dock

Weight and Dimensions

CR:130A doseBadge only
47(l) x 47(w) x 44(h)mm (excluding strap, sealing baseplate the windshield)
175(l) x 70(w) x 60(h) mm (including strap, sealing baseplate the windshield)
1.85"(l) x 1.85"(w) x 1.73"(h) (excluding strap, sealing baseplate the windshield)
6.89"(l) x 2.76"(w) x 2.36"(h) (including strap, sealing baseplate the windshield)
50g/1.8 oz (excluding strap, sealing baseplate the windshield)
85g/3.0 oz (including strap, sealing baseplate the windshield)

Temperature

-10°C to +50°C (+14°F to +122°F) Operating
-20°C to +60°C (-4°F to +120°F) Storage

Humidity

Up to 95% RH Non-Condensing

Software

NoiseTools software supplied as standard with license-free installation and free of charge upgrades available from the Cirrus Research website