

## Specifications

### Applicable Standards

Model 22 doseBadge  
IEC 61252:1993 Personal Sound Exposure Meters  
ANSI S1.25:1991 Personal Noise Dosimeters

Model 22-R Reader Unit  
Internal Acoustic Calibrator to IEC 60942:2001 Class 2

### Measurement Range (Typical)

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

### Measurement Functions

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

### One-Minute Time History of:

$L_{Aeq}$  (3dB) or  $L_{AVG}$  (4dB or 5dB)  
Peak(C) Level  
Battery Level

### For 3dB Exchange Rate

$L_{Aeq}$ ,  $L_{EX,8h}$ ,  $L_{AE}$ , % Dose, Exposure ( $Pa^2h$ ),  
Estimated % Dose,  
Estimated Exposure ( $Pa^2h$ )

### For 4dB & 5dB Exchange Rates

$L_{AVG}$ , TWA, % Dose, Estimated % Dose

### Weightings

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

### doseBadge Configuration

Independent User Configuration of:

#### Exchange Rate

3dB, 4dB or 5dB

#### Criterion Level

80dB, 85dB, 87dB, 90dB

#### Criterion Time

8hrs, 12hrs, 16hrs, 18hrs

#### Threshold

None, 80dB, 85dB, 90dB

#### Time Weighting

None, 'S' (Slow)

### Memory

The Model 22-R Reader Unit can store the following measurement data:

Up to 93 measurement of 8 hours duration  
Up to 64 measurements of 12 hours duration  
Up to 33 measurements of 24 hours duration

### Power

Internal NiMH Battery with intelligent charging system

### Model 22-R Reader

2 x AA/LR6 with Auto Power Switch Off

### Chargers Units

PS22 Mains Power Supply

### Output

#### Model 22 doseBadge

Infrared to Model 22-R Reader Unit

#### Model 22-R Reader

USB 2.0 (which also provides power to the 22-R Reader)

### Dimensions

Microphone Apex  $\varnothing$ 13.0mm, Base  $\varnothing$ 47mm, Height 38mm

### Weight

Model 22 doseBadge 45gms (1.6oz)

Model 22-R Reader 400gms (14oz)

## Environmental

Operating Temperature  $-10^{\circ}C$  to  $+50^{\circ}C$

Storage Temperature  $-20^{\circ}C$  to  $+60^{\circ}C$

Humidity up to 95% RH Non-Condensing

### Software

dBLink3 supplied as standard

Compatible with Microsoft Windows versions 98 or later, including Vista

## Ordering Codes

The Model 22 doseBadge can be provided as a complete measurement system with the following order codes:

Model 22-1 doseBadge Measurement System with 1 doseBadge  
Model 22-2 doseBadge Measurement System with 2 doseBadges  
Model 22-5 doseBadge Measurement System with 5 doseBadges  
Model 22-10 doseBadge Measurement System with 10 doseBadges

The measurement kits contain the Model 22 doseBadge units and fixing mounts, a Model 22-R Reader Unit, CHR22 Charger Unit (where X = 2,5 or 10), PS 22 Power Supply, K3 Hard Attache Case, USB Cable, Software, Batteries, User Manuals & Certificates of Calibration.

### Warranty

The Model 22 doseBadge systems are supplied with a 24 month warranty.



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the sound investment



# Model 22

## doseBadge Systems

### Personal Noise Dosimetry

- The Model 22 doseBadge is compact, extremely robust and lightweight
- No cables or controls, reducing the risk of damage, misuse or tampering
- Everything you need supplied in one user-friendly system package
- Ideal system for compliant assessment of workers' Industrial Noise exposures
- Unique size and shape, innovative functional design
- Programmable for compliance with most worldwide regulations
- "Shake-to-Wake" function to extend battery life and operating time
- Ergonomic Reader Unit with Integral Acoustic Calibrator
- Infra-Red communication between Reader Unit and doseBadges
- Rechargeable Nickel Metal Hydride (NiMH) Battery
- Outstanding Analysis & Reporting software supplied as standard



## Overview

Barriers to accurately assessing the noise exposure of workers are removed with the innovative Model 22 doseBadge system. Traditional systems rely on large, cumbersome units using cables and separate microphones which can easily become damaged or tangled in machinery.

The revolutionary doseBadge is a self-contained noise measurement device that has no cables, display or controls, making it an ideal solution for noise dosimetry because units can't be tampered with during measurements.

doseBadges communicate with an infra-red Reader Unit - similar technology to a television remote control. The Reader Unit controls the doseBadge to program, calibrate, start/stop, download and store measurements.

All key measurement parameters can be viewed on the large clear backlit screen of the Reader Unit, which also displays a time history graph of workers' daily noise exposure.



# Model 22



The Reader Unit contains an integral acoustic calibrator allowing the doseBadge to be calibrated prior to and following each measurement in accordance with international regulations.

Worldwide Occupational or Industrial Noise Regulations require the typical daily exposure of an individual worker to be determined. The doseBadge automatically achieves this by computing the Daily Exposure for European Legislation or the Time Weighted Average for US based Legislation.

Noise dosimetry measurements are only the beginning, our effective, user friendly software package dBLink3 allows users to quickly analyse and transform data into informative report formats, simplifying a potentially complex and time consuming process.

Full 'time history' information allows you to determine when key noise problems occur during a workers' day. The additional 'C' weighted Peak Time History allows you to fully assess risks from impulsive noise in the workplace.

## Applications

The Model 22 doseBadge systems are ideal for most applications as the preferred method of calculating personal daily noise exposures to ensure compliance with International Safety Legislation.

It is especially suitable for applications where workers are regularly moving from location to location, working with moving machinery, in difficult to reach areas, vehicle cabins, shift work or with unpredictable work patterns.

Typical industries include: Manufacturing, Construction, Chemical, Mining, Transportation, Fire and Police, Highway Maintenance, Food, Entertainment and also Educational Establishments.

## Operation

Our doseBadge is rechargeable, making it more economical, and designed to run for an entire shift. The Reader Unit is used to setup and calibrate one or more doseBadges prior to use, and also to start the measurement.

The doseBadge unit logs and stores data throughout the period of measurement, and a blue indicator shows when the unit is running. At the end of the measurement, data is downloaded from the doseBadge into the Reader Unit through the infra-red link, with the Reader Unit displaying measurement data.

The Model 22 doseBadge can be configured to meet a wide range of Occupational Noise Regulations and has been designed to meet the requirements of the EU Physical Agents (Noise) Directive as well as the requirements of OSHA. In addition to the overall noise levels the doseBadge also stores a one-minute sample and one-minute Peak(C) measurement.

## Measurements

The user can select from a range of preset configurations which will present the commonly used noise parameters, or a 'customised', user-defined setup can be programmed into the doseBadge by the Reader Unit.

### Overall Measurement Information

Overall Measurement Information data contains the most important and commonly used noise parameters. This data contains the Measurement Start Time and Date, Run Time, Calibration Information, Highest Peak(C) Level, 115dB(A) Maximum Sound Level Exceedence, Overload and Battery Level.

When set to the 3dB Exchange Rate, the doseBadge Overall Measurement Information contains Leq, LEX,8h (LEP,d), LAE (SEL), Exposure & Estimated Exposure in Pa2h, % Noise Dose and Estimated % Noise Dose.

When the doseBadge is configured to either 4dB or 5dB Exchange Rates, the Overall Measurement Information contains the LAVG, TWA, % Noise Dose and the Estimated % Noise Dose.

If the Time Weighting is set to Slow, or a Threshold is set, with any exchange rate (3dB, 4dB or 5dB) the Overall Measurement Information will be set to LAVG, TWA, % Noise Dose and the Estimated % Noise Dose.

### Time History Data

The doseBadge measures and logs noise levels during the measurement period. In addition to the overall noise levels, such as Leq or TWA, the instrument also logs a Time History or Noise Profile.

When the doseBadge is configured to 3dB (Q=3) with no Time Weighting or Threshold, this Time History data is stored as one-minute LAeq samples. For other configurations, the Time History data is stored as LAVG.

At the same time, the doseBadge also stores the highest Peak(C) level and the Battery level every minute. This data is available with the Time History data provided by using the supplied dBLink3 software program.



## Configuration of the doseBadge

When used with the Model 22-R Reader Unit, the doseBadge can be configured to meet almost any current and planned occupational noise regulations and standards.

For example, in the European Union, the EU Physical Agents (Noise) Directive requires the measurement of noise exposure using a 3dB Exchange Rate and recording of LEX,8h and Peak(C), whereas the American OSHA Regulations require the use of a 5dB Exchange Rate, a Slow Time Weighting and an 80dB Threshold.

The Model 22 doseBadge can be easily configured to meet any of these requirements.

Configuration can be changed quickly and easily using the menu on the Reader Unit or by programming the Reader from the dBLink3 software.

The Model 22-R Reader Unit allows the following parameters to be configured in the doseBadge, quickly and easily:

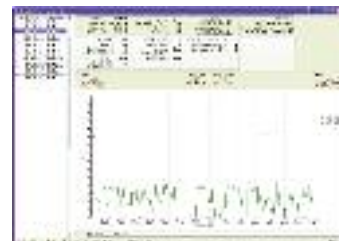
Parameter	Available Configuration
Exchange rate (Q)	3dB, 4dB, 5dB
Criterion Level	80dB, 85dB, 87dB, 90dB
Criterion Time	8, 12, 16, 18 hours
Threshold	None, 80dB, 85dB, 90dB
Time Weighting	None or slow

## Software

Our Model 22 doseBadge is supplied with the dBLink3 software program. This program uses a step-by-step wizard, which reassuringly guides the user through setup and download procedures, and allows measurement data to be viewed, analysed and printed.

Three pre-formatted report types are provided to present the measurement data. These reports can be printed or exported into a number of formats, including Word, Excel and PDF.

dBLink3 also supports previous versions of the doseBadge and Reader Units, allowing existing users to upgrade to this new program.



## doseBadge Measurement Systems

Measurement kits contain the Model 22 doseBadge units and fixing mounts, a Model 22-R Reader Unit, CHR22 Charger Unit (where X = 2,5 or 10), PS 22 Power Supply, K3 Hard Attache Case, USB Cable, Software, Batteries, User Manuals & Certificates of Calibration.

## Optional Accessories

### RK1 Keyfob remote control

Allows the doseBadge to be started and stopped without the Model 22-R Reader Unit. This is useful in situations where there is risk of damage to the Reader Unit or additional control units are required.

### WS22 Windshield for doseBadge

The WS22 Windshield protects the Model 22 doseBadge from dust, moisture and other contaminants. It also reduces the noise generated by 'spurious' events.