

897 Sound Dosimeter Measuring System



The **897 Dosimeter Sound Measuring System** conducts personal noise surveys to meet IEC and OSHA requirements.

Used as a sound level meter, the 897 provides a quick survey of targeted areas and identifies suspect locations. The 897 is also ideal for industrial and environmental sound level measurements and checking noise areas for excessive dB exposure.

Use the 897 to take measurements and record, then view and print reports from the computer by using HyperTerminal program for later use during OSHA or other official inspections.

NOTE: Microsoft no longer includes a HyperTerminal program on Windows 7.

The 897 computes dosage and records up to 31 hours, at one minute intervals, of Lavg and Lmax readings and the number of detected 140 dB peak occurrences per minute. You can then print data up to 8 hours of recorded readings.

- **Conforms to ANSI S1.4-1983, ANSI S1.25-1978, and IEC 651-1979 Specifications**
- **Choice of exchange rates (3, 4, or 5 dB) and criterion levels (70, 80, 84, 85, or 90 dB)**
- **Selectable threshold Level from 50-99 dB in 1 dB Increments**
- **Dual range (50-100 dB and 80-130 dB)**
- **Real Time Clock with rechargeable battery**
- **Security Lockout feature with Internal Data Storage**
- **Self-Test Modes test operational readiness**

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| Ordering Information | |
|---|----------------|
| Sound Dosimetry System | Catalog Number |
| 897 Universal Noise Dosimeter | 12645 |
| SMS-2 Universal Noise Dosimeter Kit | 12646 |
| 887-2 Calibrator | 12648 |
| | |
| Accessories | Catalog Number |
| RS-232 Serial Cable for 897 | 02233 |
| Parallel Printer Cable for 897 (Optional) | 02234 |
| Case, Molded Plastic | 45021 |

SMS-2 Universal Sound Dosimeter Kit

The SMS-2 contains everything necessary to perform accurate surveys for OSHA and IEC requirements, along with the performance and reliability Simpson's test instruments have to offer.

| Kit Includes: | |
|---------------|---|
| A | Rugged Carrying Case |
| B | AC Adaptor (110, 120, 220, 240) |
| C | RS-232 Serial Cable and (Optional) Parallel Printer Cable |
| D | Multi-Spline Wrench |
| E | Calibration Screwdriver |
| F | Microphone Clip |
| G | Wind Screen |
| H | 897 Dosimeter |
| I | 9V Battery |
| J | 887-2 Calibrator |
| K | Nose Cone |



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| Specifications of Model 897 | |
|-------------------------------------|--|
| GENERAL | |
| Power Requirements | Ni-Cad Rechargeable battery pack |
| Warm-Up Time | 1 minute |
| Dimensions | 6.8" (H) x 3.1" (W) x 1.1" (D), (172x80x28mm) |
| Weight | 18 oz. (500g) including battery pack |
| Case Construction | Anodized aluminum extrusion |
| Security Feature | Locks-in operating function |
| Real Time Clock | Clock continues running in all functions |
| Performance Capability | Conforms to ANSI S1.4-1983 and IEC 651-1971 for sound level function and ANSI S1.25-1978 for dosimeter function |
| SOUND LEVEL MODE | |
| Ranges | 50 to 100dB, 80 to 130 dB |
| Accuracy | True RMS, Type S2 |
| Dynamic Range | Selectable from 50 to 100dB and 80 to 130dB |
| Frequency Response Weighting | "A" Weighting |
| Response Time | Slow (1 second) |
| Crest Factor | 10:1 at maximum indication |
| Frequency Range | 31.5Hz to 8KHz |
| DOSIMETER MODE | |
| Threshold Level | Selectable from 50-99dB in 1dB increments |
| Criterion Level | Selectable, 70, 80, 84, 85 or 90dB |
| Criterion Duration (TC) | Eight (8) Hours |
| Exchange Rate | Selectable 3, 4 or 5dB |
| Maximum Indication | 999.9% DOSE |
| Resolution | 0.1% DOSE to 999.9% |
| Elapsed Time | Displays either Hours: Minutes: Seconds, up to 99 Hours 59 Minutes, 59 Seconds. Timing Accuracy: 0.05% |
| 140dB Peak | Displays number of 140dB peaks that have been detected |
| MICROPHONE | |
| Type | 0.52" (13.2mm) Diameter Electret Condenser, Omnidirectional 70° angle of incidence. Maximum sound pressure level 148dB. |
| DISPLAY | |
| Numerical | 4 Digit LCD |
| Annunciators | Lo Batt, Spl Max, Int 60, % Dose, dBA, plus a colon and decimal point |
| ENVIRONMENTAL | |
| Operating Temperature | -10° to 50°C |
| Temperature Coefficient | ±0.05dB per °C (25° to 50°C) for reference measurement of 105dB at 1000Hz |
| Relative Humidity | Range: 0-95% RH Influence: Less than 0.5db over measurement range |
| Storage Range | -30° to 45°C (Limitation of battery) |
| Magnetic Field Influence | No effect in of 1 oersted (80A/m) |

STANDARD REPORT OUTPUT

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SIMPSON 897 DOSIMETER
SOUND ANALYSIS REPORT
TYPE 2A

CRITERION = 90 DB
THERSHOLD = 80 DB
EXCHANGE RATE = 3 DB
UNIT IDENTIFACATION # 25

JOB

NAME

LOCATION

START DATE: 21/FEB/95
START TIME: 14:24
CALIBRATION: 94.8 DBA 14:24 21/FEB/95 RANGE: 50/100 DB
CALIBRATION: 113.9 DBA 14:24 21/FEB/95 RANGE: 80/100 DB

MEASUREMENT SUMMARY:
RUN TIME          = 00:15
HOLD TIME         = 00:02
L EQ              = 87.2 DBA
SPL MAX           = 87.2 DBA
DOSE              = 1.5%
140 DB PEAKS     = 0

HISOTGRAM

      50      60      70      80      90      100      110      120      130
HRS:MIN  + ..+ ..+ ..+ ..+ ..+ ..+ ..+ ..+ ..+
14:25    ===== 88
14: 230          === 86
14:35    ===== 76 HOLD
HRS:MIN  + ..+ ..+ ..+ ..+ ..+ ..+ ..+ ..+ ..+

HRS:MIN  LAVG      LMAX      PEAKS      RANGE
14:25    86.9      95.6      0        CHANGED
14:26    93.2     106.9     0        80/130
14:27    87.9      92.5      0        80/130
14:28    87.3      97.3      0        80/130
14:29    86.4      86.6      0        80/130
14:30    86.5      93.0      0        80/130
14:31    87.2      90.0      0        80/130
14:32    87.2      91.2      0        80/130
14:33    84.9      92.1      0        80/130
14:34    85.4      85.6      0        80/130
14:35    86.2      86.6      0        CHANGED
14:36    86.5      86.6      0        50/100  HOLD
14:37    60.9      71.5      0        50/100  HOLD
14:38    85.1     101.6     0        50/100
14:39    64.6      78.4      0        50/100

END OF REPORT

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887-2 Calibrator

The model 887-2 calibrator has a selectable sound pressure range of 94dB and 114dB at 1 KHz.

The calibrator is immune to a wide range of temperature and humidity conditions is compatible with 1/2" microphone.

Operational readiness is indicated by the low battery red LED.



Specifications for 887-2 Calibrator

GENERAL

| | |
|--------------------------------|--|
| Battery | One 9-volt battery, NEDA 1604A |
| Battery Life | Approximately 35 hours for 2 hours per day operation, with 9V alkaline battery |
| Mechanical Construction | Aluminum case includes acoustic cavity and provides shielding |
| Weight | 13.5oz (.35kg) - 897, 5.9 lbs. (2.68 Kg) SMS-2 Kit |
| Dimensions | 5 1/4" long, 2" diameter (131 mm long, 50mm diameter) |

ACOUSTIC OUTPUT

| | |
|------------------------|-------------------------------------|
| Microphone | 0.52" inch diameter |
| Frequency | 1000Hz \pm 1% |
| Sound Pressure | Selectable at 94 or 114 dB |
| Reference Level | 0dB = 20 μ Pascals |
| Accuracy | \pm 0.5dB at reference conditions |
| Distortion | Less than 2% |

ENVIRONMENTAL

| | |
|------------------------------------|-------------------------------|
| Operating Temperature | 0° to 50°C |
| Storage Temperature | -40 to +60°C, battery removed |
| Temperature Coefficient | Less than \pm 0.05 dB/°C |
| Operating Relative Humidity | 0 to 90%, non-condensing |
| Reference Conditions | 23°C, 760mm Hg |
| Relative Humidity | 30 to 60% |

Specifications subject to change without notice

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