

Purchase Specification

Advanced Integrating/Datalogging Sound Level Meter

This specification describes the performance and physical requirements of an integrating/datalogging sound level meter, which must be met in their entirety for consideration for purchase. The sound level meter must be a lightweight, portable, battery operated, and integrating/datalogging instrument. Windows® based software for data presentation and storage must be available.

HOUSING

The sound level meter housing shall be of a durable polycarbonate modular construction or other acceptable polycarbonate or metal casing. An easy-to-read digital liquid crystal display, with quasi-analog bar graph, shall be provided for primary data review and operation. The keypad shall provide individual clearly marked operator controls.

The instrument shall have individual cable outputs for RS-232 communication to computer or printer, AC and DC outputs.

The housing shall be no more than 3.3 x 8.2 x 1.8 inches (84 x 208 x 47 mm) not including the height of the preamp, and weight shall not exceed more than 23.0 oz. (654 g) including preamp and batteries. A tripod mount (threaded insert on the back of the meter) must be incorporated into the case and accept a standard ¼ - 20 tripod mounting screw.

The housing shall accept an external, plug-in, 1/1 or selectable 1/3 to 1/1 octave band filter.

DATALOGGING

Selectable logged data for Lav (or Leq), peak, Lmax, L10, L90 or any combination thereof shall be printable into reports for summary, time history intervals, individual memory locations from session data and grouped filter formats or any combination thereof. Multi-Event study or selectable session logging capability, for recorded data, shall be available with the Run-Pause feature allowing from 4 hours, at 1 second intervals with five parameters logged, to 209 years at 24-hour intervals with one parameter logged. Real-Time Clock and Calendar shall permit Auto-On and Run Time to log a selectable or threshold triggered study. Logging memory shall be standard 128K or expandable to 512K.

PRINTING / SOFTWARE

To provide flexibility for field use, the instrument must be able to send the datalogged information to both parallel printers and personal computers. Windows based software must be available for data presentation and storage and to assist in instrument configuration. The same Windows software must be simultaneously capable of interrogating, reporting and storing data from IAQ monitors, noise dosimeters, sound level meters, gas monitors and vibration monitors.

DISPLAY

Viewable data shall be selectable for review of current and selected measurement parameters. Data shall include: SPL, averages (Leq or Lavg), Lmax, Lmin, LN, LDn, CNEL, %OL, PA2S, PA2H, SEL, RTMS, RTMH, LPk, Llog, TAKM, Batt and optional LC-A or in any combination thereof.

PERFORMANCE SPECIFICATIONS

- The sound level meter shall be individually settable for the following parameters: Exchange rate (3, 4, 5 or 6), thresholds (from 0 to 180 or off), exceedence values (Ln from 1 to 99%), threshold trigger levels, auto on time, real time clock/calendar, calibration value, second peak detector, 3 or 5 second taktmaximal, and session mode.

- In addition, A, C or linear weighting, fast, slow, impulse or peak response times, range settings from 20 dB to 140 dB in 10 dB steps and 60 dB dynamic ranges, and logging intervals of 1, 3, 5, 10, 15 or 30 seconds or minutes and 1, 2, 4, 8, or 24 hours. Settable keypad security lockout to prevent tampering while the dosimeter is in use.
- Accidental turn off and memory clear shall be preventable by way of a five (5) second countdown feature, and selectable momentary or continuous backlight for LCD display.
- Real-time clock and calendar shall be incorporated and an optional second circuit for measurement of simultaneous “A” and “C” weighted sound pressure levels (C-A) shall be available.
- All users set-up functions must be programmable from an easy-to-use Windows based software program.

MICROPHONE & Preamplifier

Instrument shall have a field-replaceable Type I or Type II, ½ inch free-field electret (prepolarized) microphone with optional ¼ and 1 inch microphones. The removable preamplifier will directly accept a 0.52 inch and other size microphones with proper adapter and will drive up to 100 feet of cable with negligible signal loss for remote applications.

POWER

Depending on which options or filters are incorporated, the instrument shall be powered by one (2) standard 9V alkaline batteries with an 8 to 29 hour life expectancy. A field replaceable (in non-intrinsically safe versions) 2-3 year lithium cell battery shall also be utilized to power the clock/calendar and to hold all data in case of power failure or while replacing the standard 9V batteries. A “BAT” indication shall appear in the display when the 9V batteries need replacing.

CALIBRATION - CALIBRATOR

Calibration shall be accomplished using the sound level meter keypad to access internal electronics, which automatically store the instrument’s most recent calibration information. The calibration meets ANSI and IEC compliant accuracy when connected to the calibrator.

APPROVALS

- The instrument must meet the following national and international standards: ANSI S1.4-1983 Type I and Type 2; IEC 60651-1979 Type I and Type 2; and IEC 60804-1985 Type I and Type II, PTB and CE mark.
- Electromagnetic Field effects shall be 1 oersted at (80 A/m) at 60 Hz produces a maximum reading of 40 dB on linear weighting. Electrostatic fields negligible as long as the microphone grid is kept on the microphone.
- Optional intrinsically safe model with octave band filters: UL and cUL (CSA) Class I, Groups C & D; MSHA 2G.

MANUFACTURER REQUIREMENTS

Manufacturer shall maintain a quality management system that is independently accessed and registered to ISO 9001 standards for both manufacturing and service.

Manufacturer shall maintain a calibration laboratory that is independently accredited to ISO/IEC Guide 25.

These specifications can be achieved with Quest Technologies models 1900 or 2900 or equal.

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