

Purchase Specification

Type 2 Integrating Sound Level Meter

This specification describes the performance requirements of a Type 2 Integrating Sound Level Meter, which must be met in their entirety for consideration for purchase. The Integrating Sound Level Meter (ISLM) must be a small, handheld device consisting of an integrated microphone, user interface, power supply, display and outputs.

ENCLOSURE

The ISLM enclosure shall measure no more than 2.8" x 6.15" x 1.3" or 22.39 cu. in. Total weight, including microphone, battery, electronics and housing shall not exceed 10.8 ounces. The enclosure must include a recessed, threaded nut for mounting the ISLM on a tripod. The enclosure must be clearly marked on the face of the ISLM with the type of weighting filters, response rates, measurement ranges and displayed data that are available and currently selected.

USER INTERFACE

A simple, logical user interface is critical. Distinct operator control buttons shall be provided for filter weighting selection, measurement range selection, response rate selection, data display selection, calibration, reset and operating mode selection.

POWER SUPPLY

The ISLM shall incorporate a low power consumption power supply with integrated battery for all electronics. The power supply shall provide a minimum of twenty-five (25) hours of continuous operation using one (1) disposable 9-volt alkaline battery that is available commercially-off-the-shelf. The ISLM shall activate a low battery indicator in advance of power being insufficient to maintain proper circuit operation.

MICROPHONE, PRE-AMP AND DETECTOR

The ISLM must incorporate an electret microphone measuring 0.5" (13.5mm) in diameter. The microphone shall provide measurement of sound pressure levels across the ranges of 30 to 140 dB(A), 40 to 140dB(C) and 43 to 143dB(Pk). The ISLM must provide a minimum of a 70dB dynamic range. The microphone must be field replaceable without tools and the pre-amp and microphone shall be detachable. An optional extension cable shall permit the microphone and pre-amp to be located up to 50 ft. (15 m) away from the ISLM.

MEASUREMENTS & OUTPUTS

The ISLM shall provide a simple, single-value display of the following measurements based on user selection of either "A", "C" or "Z" weighting; Fast, Slow Peak or Impulse response rates; and 30 to 100dB, 50 to 120dB and 70 to 140dB measurement ranges: Sound Pressure Level (SPL), Integrated average SPL (Leq or Lavg), Duration of the integration period (RT), Overall maximum SPL during integration (MAX), Overall minimum SPL during integration (MIN) and percentage of the RT when the SPL exceeded the upper limit of the selected measurement range (%OL). All dB readings shall be displayed in a minimum 0.1dB resolution. The ISLM shall provide an AC and DC output signal suitable for connection to external recording devices.

INTRINSIC SAFETY

The ISLM must be certified by an independent testing laboratory(ies), recognized by the United States, Canada and Europe, as being intrinsically safe for use in hazardous locations.

FIELD CALIBRATION

The ISLM must permit field calibration. The ISLM manufacturer shall offer an acoustical field calibrator, as an optional accessory. The acoustical calibrator shall conform to IEC 942: 1988, Class I and ANSI S1.40-1984 standards. A single push-button must exist on the face of the ISLM for auto-calibrating the ISLM in the field using the acoustical calibrator.

RECALIBRATION

The manufacturer of the ISLM must maintain an independently accredited calibration laboratory for performing factory recalibrations of the ISLM and acoustical calibrator.

These specifications can be achieved with Quest Technologies Model 2200R Integrating Sound Level Meter or equal.