3M Personal Safety Division

3M™ SoundPro™ Sound Level Meters

Environmental & Occupational Noise Measurement

Intuitive Operation

Comprehensive.

- Accurately measures, documents and displays noise exposures to support hearing conservation
- Measures against multiple sound level meter standards simultaneously with two virtual meters
- Octave band analysis capability enables environmental noise monitoring, noise enforcement, and noise control evaluation

Intuitive.

- Large displays with menu-driven interface and quick keypad calibration

Powerful.

- Available in Class/Type 1 and Class/Type 2 models to accommodate application-specific analysis
- Removable SD memory card plus optional data logging for enhanced post-processing and analysis
- Compatible with 3M™ Detection Management Software DMS (optional) for advanced reporting and analysis

To find out more about 3M Detection Solutions products, see www.3M.com/Detection.

3M Detection Solutions: Brilliantly Intuitive

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Robust
Sound Measurement Technology

Removable preamp

- Preamp can be easily removed to enable interference-free low-level monitoring, especially for environmental noise applications

Octave band analysis

- Full and third octave filters for evaluating the effectiveness of noise controls and hearing conservation compliance.
- Provides easy-to-understand noise signatures to facilitate analysis.

Data logging (DL models)

- Helps you better manage hearing conservation compliance efforts.
- Facilitates measurement and management of noise exposure data as part of an effective hearing conservation program.

Statistics for community noise

- Offers LDN, day/night average sound level, and CNEL, community noise equivalent level, measured over a 24-hour period.
- Helps law and other security officials enforce community noise standards.

Specialty application capabilities

- Optional acoustic spectral curves, speech intelligibility and reverberation add-ons enable advanced monitoring and analysis functions.
- Reduces the need for separate monitoring equipment, saving time and cost.

Ease of use

- Large display with intuitive pushbutton/softkey interface offers easy viewing and navigation. Provides quick access to data.

Sound Pressure Level Display

Displays the current Sound Pressure Level (SPL) with selected time response and filter weightings. The amplitude of the displayed measurement is shown both graphically by the length of the bar and numerically below the bar.
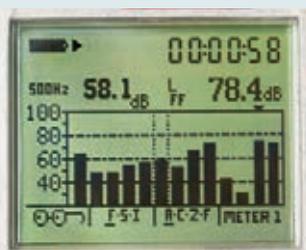
1/1 Octave Band Bar Chart Screen

Displays 1/1 octave analysis measurements in filter band and broadband values for both meters 1 and 2. This screen contains 13 bars with 11 filter bands and two for broadband.
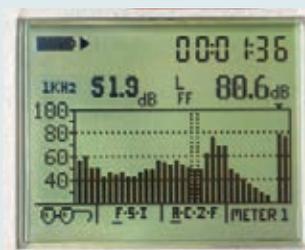
1/3 Octave Band Bar Chart Screen

Displays 1/3 octave-band analysis measurements in filter band and broadband values for both meters 1 and 2. This screen contains 35 bars with 33 filter bands and two for broadband.

3M Detection Solutions: Brilliantly Intuitive

Specifications

General

Display Languages:	Chinese, Czech, English, French, German, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, and Turkish
User Interface:	10 push buttons and 4 soft keys, menu driven
Display Type:	Transflective 128 X 64 Dot Matrix LCD with additional fiber optic backlighting

Conformance to Standards

EMC Requirements:	EN/IEC 61326-1(2005) Group 1, Class B Emissions / Industrial Location Immunity. CFR:47 (2008) Part 15 - Meets FCC Class B Emissions
Performance Requirements:	EN/IEC 61672-1(2002), ANSI S1.4 (R2006), ANSI S1.43(R2007), EN/IEC 61260 (2001), ANSI S1.11 (R2009), (also meets requirements of former standards IEC 60651 and 60804) IEC60268-16 (2003) with Speech Intelligibility option
Safety Requirements:	IEC61010-1 (2010)
Certifications:	CE Mark, WEEE, RoHS

Measurements

Parameters:	SPL, L_{Max}, L_{Min}, L_{Pk}(peak), L_{EQ}/L_{AVG}, SEL, LN (selectable L1 to L99), TWA, Taktm, Taktmx, Dose, PDose, Exposure (Pa2H/Pa2S), LDN, CNEL, PTWA, L_{C-A}
Ranges:	120 dB+ (A-weighted) total dynamic measurement range over 8 individual ranges of 90 dB (A-weighted) each (with filters - 80 dB ranges); overall measurement range 0 dB to 140 dB
Peak Range:	Up to 143 dB using standard BK4936 microphone; higher with optional microphones and preamps
Frequency Weighting:	A, C, Z and F (Flat)
Response Time:	Fast, Slow, IEC Impulse
Exchange Rates:	3, 4, 5, and 6 dB
Criterion Level:	40 to 100 dB
Upper Limit Time Logging:	10 to 140 dB selectable
Run Modes:	Level triggered run/pause, clock/date triggered power on and run for programmed duration, external logic input run/pause, and keypad initiated run/pause for programmed duration
Measurement References:	SPL: 114 dB Frequency: 1 kHz Direction: 0 degrees using free-field response microphone

Octave and Third Octave Filters (optional)
(base-10 bands, as recommended by IEC61260 [2001])

Full Octave Filters:	11 bands with center frequencies from 16 Hz to 16 kHz)
Third Octave Filters:	33 bands with center frequencies from 12.5 Hz to 20 kHz

Calibration

History:	Complete calibration history with post study verification logged with calibration history

Logging and Storage

Logging:	DL Models only. L_{Max}, L_{Min}, L_{Pk}(peak), LN, L_{EQ}/L_{AVG} may be logged at 11 selectable intervals from one second to 60 minutes to the included SD (secure digital) memory card. Use 3M™ Detection Management Software DMS to interpret data files
Summary Data:	All session/study data is stored to the SD card. Summary data may be interpreted with 3M™ Detection Management Software DMS, or exported to spreadsheet or XML file with an available utility
Memory:	Accepts 32 MB to 32 GB SD memory cards. Card included with all models and stores multiple summary sessions/studies and for setup storage (Contact factory for preferred SD card manufacturers)

Special Functions

Back Erase:	Selectable 1 to 20 seconds removal of measurement data (data removed by back erasing and retained in session file)
Security:	4 digit code protection for Runs and Setups available
Optional Acoustic: Spectral Curves:	Noise Criterion (NC) Curves, Preferred Noise Criterion (PNC) Curves, Room Criterion (RC) Curves, Balanced Noise Criterion (NCB) Curves, Noise Rating (NR) Curves, Audiometric Room Curves (per ANSI S3.1, per OSHA Hearing Conservation Amendment, and per ISO Hearing Screen for Audiology Booths)
Optional Speech Intelligibility Function:	Firmware can be installed in the SoundPro series to allow the testing and evaluation of intelligibility of human speech through public address (PA), fire alarm and mass notification systems (MNS), the STI-PA method in accordance with IEC 60268-16 and NFPA 72 National Fire Alarm Code. Results are in STI or CIS. On meter post-processing available
Optional Reverberation Time (RT-60):	Used to measure decay time or acoustic decay performance of a room or closed space

Ports and Connections

Power Jack:	External power supply 9-16 VDC
AC/DC Output:	3.5 mm stereo (tip-AC, Ring-DC, Ring2-Ground)
10 Pin Auxiliary Connector:	RS-232, 3 digital outputs, 1 digital input
USB:	Conforms to USB 2.0, mini-USB connector

All Specifications Subject to Change.

Specifications continued

Electrical Characteristics

Batteries:	4 disposable AA alkaline cells, typically >10 hours continuous use without backlight (SLM only without filters activated); optional nickel metal hydride (NiMH) cells, typically 10+ hours (SLM only)
External DC Power Input:	100 – 240 VAC, 47-63 Hz transformed to 9 VDC
Standard Microphones:	Class/Type 1 Precision – BK4936; Class/Type 2 General Purpose – QE7052; other optional types and sizes available from ¼" to 1" prepolarized or standard condenser types
Microphone Polarization:	Selectable 0 volts or 200 volts (Class/Type 1 models only)
Microphone Sensitivity:	Selectable nominal values in decibels relevant to 1 Volt/Pa
Meter Input Impedance:	20 kΩ in series with 11 µF capacitance, with 100 pF capacitance to ground
Remote Cable:	Will drive up to 15 meters of cable with negligible signal loss
Preamplifier:	Removable preamp directly accepts ½" (0.52" or 13.2 mm) microphone; other sizes require adapter
Preamplifier Input Impedance:	Greater than 1 GΩ; less than 2pF

Physical Characteristics

Size:	3.1"W X 11.1"H X 1.6" thick (with preamp & microphone); 7.9 cm X 28.2 cm X 4.1 cm
Weight:	0.54 kg or 1.2 lbs. (including batteries)
Housing:	Stainless fiber filled ABS polycarbonate with additional internal EM/RFI shielding
Tripod Mount:	Standard photographic mount on rear accepts ¼"- 20 screw threads

Environmental

Temperature:	Operating -10ºC to +50ºC (<± 0.5 dB effect); Storage -25ºC to +70ºC
Humidity:	10% to 90% RH, non-condensing
External Fields:	Electric – 10 V/meter, 1 kHz modulated, 30 MHz – 1 GHz, <55 dBC; magnetic - 80 A/m, 50/60 Hz, no significant effect

All Specifications Subject to Change.

3M™ Detection Management Software DMS

Designed for dosimetry, sound level measurements, heat stress assessments and environmental monitoring, this advanced software thelps safety and occupational professionals:

Configure.
• Configure instrumentation and save pre configured setups

Analyze.
• Retrieve, download, share, and save instrument data
• Create charts, tables, and panels to intuitively interpret your measurements

Report.
• Generate insightful charts and reports
• Export and share recorded results

The software integrates with 3M™ Detection Solutions data logging instruments and will help you improve both operating efficiency and reporting in acoustics, heat stress, and environmental monitoring.

Product No.	Description	3M ID
DMS	Detection Management Software	70-0716-0821-3

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