3M Science. Applied to Life.™

Detection Solutions

Product Guide

3M Science. Applied to Life.™

3M delivers easy and comprehensive solutions to complex detection challenges.

3M™ Detection Solutions help make it easy to measure noise, heat or indoor air quality hazards to help you select protection for your application. Our detection solutions deliver accurate and reliable measurements, and 3M™ Detection Management Software (DMS) makes it easy to report and share data.

Complying with regulations, implementing appropriate abatement programs and analyzing noise control options are all easier with 3M Detection Solutions for exposure assessment, noise analysis and employee engagement. 3M's flexible instrumentation coupled with powerful software is an innovative solution for your measurement challenge.

Table of Contents

Occupational & Environmental Noise

3M™ Noise Indicator NI-100 4-5

3M™ Sound Detector SD-200 Sound Level Meter 6-7

3M™ Sound Examiner SE-400 Series Sound Level Meters 8-10

3M™ Sound Pro™ SE and DL Series Sound Level Meters and Real-Time Analyzers 11-13

3M™ Edge Personal Noise Dosimeters 14-15

Heat Stress Monitors

3M™ QUESTemp° 32/34/36 Area Heat Stress Monitors 16-18

3M™ QUESTemp° 44/46/48N Area Waterless Wet Bulb Heat Stress Monitors 19-20

Environmental Monitoring

3M™ EVM Series Particulate Mass Concentration & Air Quality Monitors 21-24

Data Management & Analysis

3M™ Detection Management Software (DMS) 25-27

3M™ Occupational & Environmental Noise Detection

Occupational Noise Measurement

3M Noise Indicator NI-100

Increased Awareness Leads to Better Hearing Protection Compliance

The Noise Indicator NI-100 alerts users to potentially dangerous noise levels, helping identify areas where noise assessment may be needed to determine the need for hearing protection. Users clip the Noise Indicator to a shirt or jacket, and its LED light delivers a clear indication when noise levels exceed a potentially hazardous threshold. Its small size and lightweight design make it suitable for workers in a variety of industries.

Visual "Go/No Go"

- Green LED ("Go") flashes when noise level is below 85 dBA
- Red LED ("No Go") flashes when noise level exceeds 85 dBA
- Easy-to-understand visual indication when hearing protection may/may not be needed

One-Button Operation

- Simply clip to lapel and power-on
- Easy for workers to use and understand

Actual size

Rechargeable Battery

- Provides up to 200 hours of use between charges
- 10-hour auto-power off helps prolong battery life for extra cost savings

Small Size

- Compact, lightweight design

Specifications	
Size	2" (L) x 1.4" (W) x 0.5" (D) / 5.1 cm (L) x 3.6 cm (W) x 1.3 cm (D)
Weight	0.6 oz (17 g)
Temperature Operating/Storage	14 to 122°F / -10 to 50°C
Humidity Range	0 to 95%; non-condensing
Accuracy	3 dB
Alert Level	Flashes red when >85 dBA / Flashes green when <85 dBA

Power/Electrical	
Battery Type	LI-Poly (flat cell)* with approximately 200 hours of operating before recharging
Battery Life	Approximately two years of charging cycles
Charging	A mini-USB cable (sold separately) plugs into bottom port of device
Auto-Power Off	The device will power off after approximately 10 hours

* Not certified intrinsically safe.

Product Number	Description	3M ID
NI-100	Noise Indicator/10 per case	70-0715-6394-7
NI-100 EMEA	Noise Indicator (EMEA)	70-0715-6471-3
53-575	USB Cable Accessory	70-0715-8175-8

Occupational & Environmental Noise

3M™ Sound Detector SD-200 Sound Level Meter

The Sound Detector SD-200 is a compact, lightweight sound level meter designed for measurement of workplace noise levels. Its intuitive design makes it easy for users to measure sound levels and helps users determine the attenuation of hearing protection that may be required. The integrating feature computes the average sound pressure level, allowing for more accurate assessment of intermittent sound levels.

User-Friendly

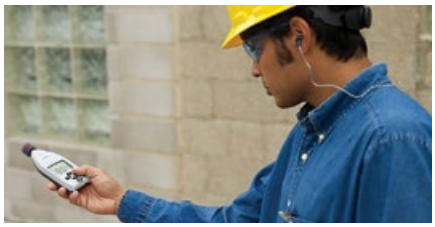
- Intuitive interface for out-of-the-box operation
- Averaging functionality provides steadier reading in environments where noise levels are variable
- Visual LED alerts help users assess the need for hearing protection

Industry-Compliant

- Meets applicable ANSI and IEC Class/Type 2 standards

Economical

- Rechargeable battery helps lower total cost of ownership compared to sound level meters that use replaceable batteries



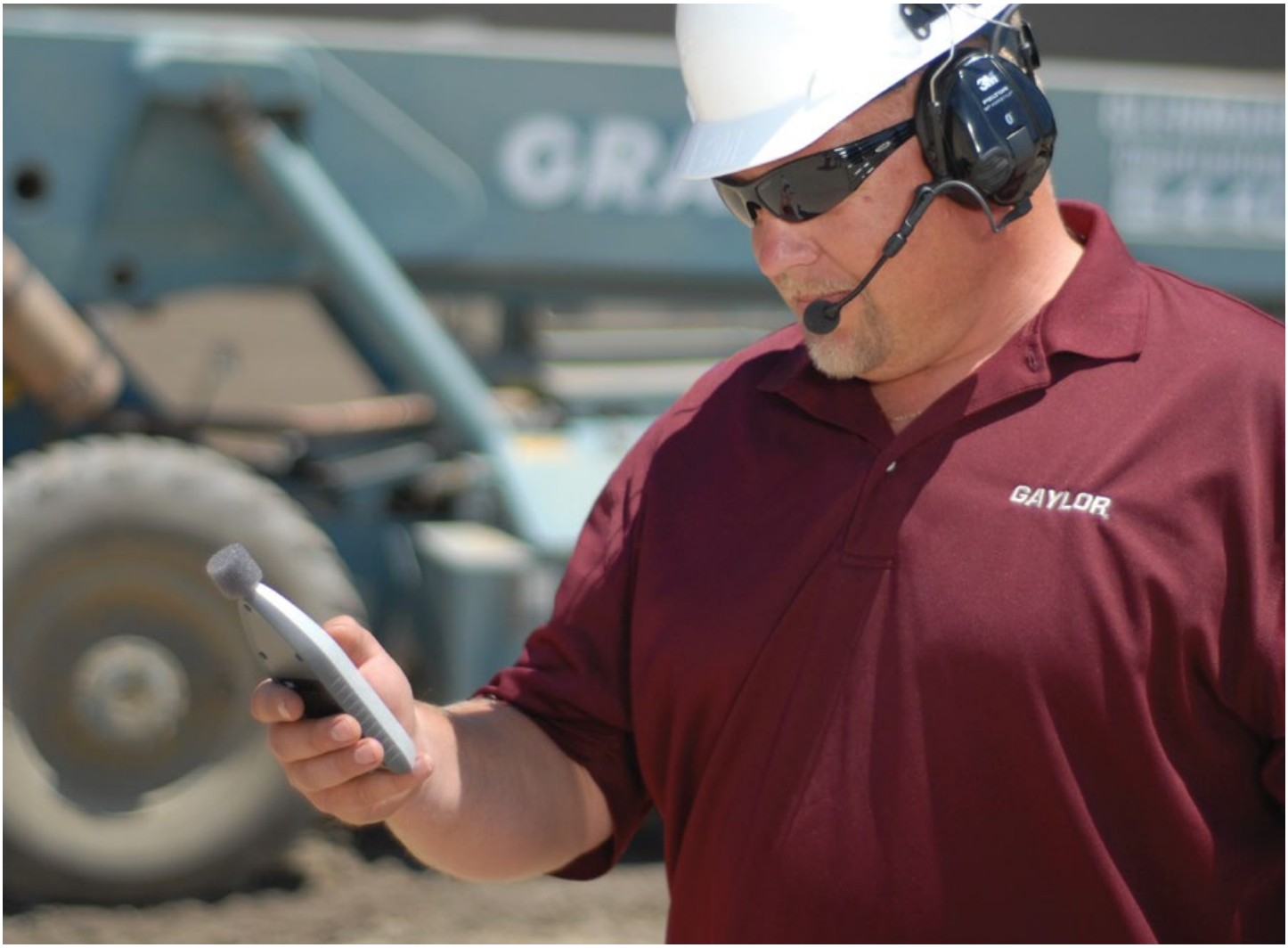
Specifications	
Size	6.5” x 2.4” x .9” / 16.5 cm x 6.1 cm x 2.3 cm
Weight	4.4 oz (125 g) approx.
Tripod Mount	Accepts a ¼” – 20 screw (located on bottom, backside of the instrument)
Housing	ABS/polycarbonate
Battery	Lithium polymer (1000 mAh), rechargeable; Run-Time: 50+ hours without LEDs activated; low battery indicator
Microphone	Omni-directional; Class/Type 2; ½” diameter, electret condenser
Display Digits	¾” (2 cm) with 0.1 dB resolution and 0.5 sec. update rate
Keypad	5 keys including: F/S, A/C, Mode, Run/Stop and Power On/Off
Charging	USB cable is provided to charge the instrument with a computer

Conformance to Standards	
Standards	ANSI S1.4 1983 (R 2006) ANSI S1.43 1997(R 2007) IEC 61672-1 (2002) IEC 61010-1 (2010) CE 2004/108/EC Electromagnetic Compatibility (EMC) 2006/95/EC Low Voltage Equipment (LVD) Safety 2002/95/EC Restriction of Hazardous Substances (RoHS) 2002/96/EC Waste Electrical and Electronic Equipment (WEEE)

Measurements	
Displayed Data and Status Indicators	Sound Pressure Level (SPL), Average value (L_{EQ}/L_{AVG}), LED Alert (with Hearing Protection icon), Maximum value (MAX), Minimum value (MIN), Run-Time, Overload (OL), and Under-Range (UR)
Linearity Range	45 to 130 dB (Dynamic Range)
Weighting	A or C
Time Response	Fast or Slow
Exchange Rate (ER)	3 dB or 5 dB

Temperature Ranges	
Operating Temperatures	32 °F to 104 °F (0 °C to 40 °C)
Operating Atm. Pressure	80-110 kPA
Relative Humidity	0%- 90%, non-condensing
Storage Temperature	-4 °F to 158 °F (-20 °C to 70 °C)
Storage Atm. Pressure	50-150 kPAr

Product Number	Description	3M ID
SD-200	Sound Detector	70-0715-6546-2
53-575	USB Cable	70-0715-8175-8
SD-WS	Windscreen	70-0716-0639-9
56-990	Adapter	70-0715-8115-4
AC-300	AcoustiCal Calibrator	70-0716-0629-6
59-045	Tripod	70-0715-8374-7



Occupational & Environmental Noise

3M™ Sound Examiner SE-400 Series Sound Level Meters

The Sound Examiner SE-400 series of integrating, data-logging sound level meters is engineered to accurately measure noise levels in highly variable environments, including those that require intrinsic safety. They compute the average sound pressure level (LEQ/LAVG) over the run time, helping you to more accurately assess occupational and environmental noise levels.

Removable Preamp*

- Preamp can be easily removed to enable interference-free, low-level monitoring, especially for remote use

* Available on non-Intrinsically Safe models only.

Aerodynamic Shape

- Minimizes disturbance to sound fields being measured, assuring accurate readings

Conformance to Standards

- Meets IEC 61672-1 (2002) and ANSI S1.43- 1997 (R2007) standards and is CE certified

Intrinsic Safety approvals on SE-401-IS and SE-402-IS.

Choice of Microphones

- User can specify microphone type (Class/Type I or Class/Type II) based on application
- Select Type II for general duty; Type I accuracy for legal metrology

Onboard Data Logging

- Allows user to capture maximum, minimum and peak values for thorough analysis
- Can be used with 3M™ Detection Management Software DMS to manage compliance with hearing conservation programs

Measurements	
Parameters	SPL, L_{MAX}, L_{MIN}, L_{PK} (peak), L_{EQ}/L_{AVG}, L_E, Elapsed Time
Peak and Frequency Weighting	A, C, Z
Response Time	Fast and slow
Ranges	110 dBA total dynamic measurement range; overall range 30 – 140 dBA (single range)

Measurements	
Max Peak Level	143 dBA (sampled peak)
Exchange Rates	3, 4, 5 dBA
Status Indicators	Run, Stop, Battery Status, OL (overload), UR (under-range), Run-Time, Locked Status

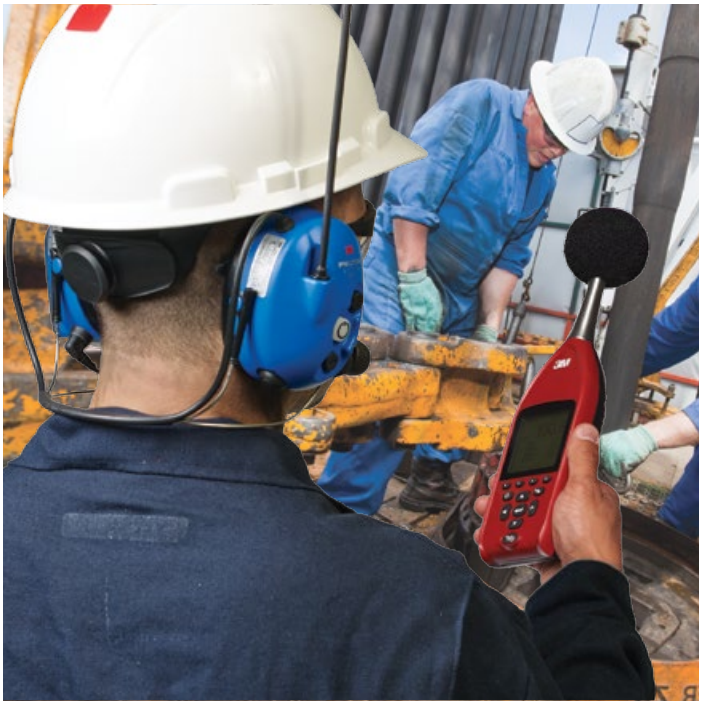
Physical	
Size	11.2” (L) x 2.8” (W) x 1.3” (D) / 28.4 cm (L) x 7.1 cm (W) x 3.3 cm (D) (with preamp and microphone)
Weight	SE-401 model: 12.9 oz / 367.5 g (with preamp and microphone) SE-402 model: 13.4 oz / 380.5 g (with preamp and microphone) SE-401-IS model: 14.5 oz / 410 g (with preamp and microphone) SE-402-IS model: 14.5 oz / 410 g (with preamp and microphone)
Housing	ABS polycarbonate IP65 (enclosure rated to IP65; microphone and external connectors not IP rated)
Tripod Mount	Standard photographic mount on backside accepts ¼” – 20 screw threads
Drop Protection	Minimum 2 meters onto concrete, 2 times on each face; acceptable microphone damage

Environmental	
Operating Temperature	14°F to 122°F (-10°C to 50°C)
Humidity	0 to 90% RH, non-condensing
Storage Temperature	-4°F to 140°F (-20°C to 60°C)
Atmospheric Pressure	Operating: 80 to 110 kPa; Storage: 50 to 150 kPa

Power / Electrical	
Battery	Lithium polymer: 2500 mAHr for standard models / 1500 mAHr for IS models, rechargeable; Run-Time: 18 hours minimum (excluding the backlight) for standard models / 8 hours for IS models
Battery Life	3 years or 500 cycles (service replaceable)
Battery Charge	USB charger is provided with instrument; battery charge time: 8 hours (approx.)
Internal Memory	2MB (34 days at 1-minute logging)
Communications	USB interface
Standard Microphones	Class/Type 1 Precision QE4936 microphone; Class/Type 2 General QE7052 microphone
Preamplifier	Preamp directly accepts ½” (13.2 mm) microphone
Remote Cable	Drives up to 15 m (50 ft) of cable with negligible signal loss (not available on IS)

Ports and Connections	
AC/DC Output	3.5 mm stereo (tip – AC, center ring – DC, ring – Gnd); not applicable to IS models
I/O Connector	RS-232 (I/O connector not applicable to IS models)
USB	Conforms to USB 2.0, mini-USB connector

Conformance to Standards	
IEC 61672-1 (2002)	Electroacoustics, Sound Level Meters, Part 1: Specifications
ANSI S1.43-1997 (R2007) ANSI S1.4-1983 (R2006)	American National Standards: Specifications for Integrating Averaging Sound Level Meters Specifications for Sound Level Meters
CE Mark	Self-Certified
Intrinsic Safety Standards (SE-401 IS and SE-402 IS models)	UL 913, Ed.7, 2011-09-23; CSA C22.2; No. 157-92, (R2013); EN 60079-0 (2009); EN 60079-11 (2012); EN 60079-26; (2007); IEC 60079-0 Ed.5 (2007); IEC 60079-11 Ed. 6: (2012); IEC 60079-26; Ed. 2: (2009), CE mark 0539
Certificate Number	IECEx UL 13.0006X, Class I, Division 1, Groups C and D; Exi is defined as Intrinsically Safe (for use in potentially explosive atmospheres)
Hazardous Locations Class	Ex II 1 G Ex ia IIB T4 (DEMKO 13 ATEX 1210031X); Ambient temperature range: -20°C to +50°C



Product Number	Description	3M ID
SE-402	Sound Examiner SE-402	70-0716-0794-2
SE-402-AC3	Sound Examiner SE-402-AC3	70-0716-2434-3
SE-402-IS	Sound Examiner SE-402-IS	70-0716-0796-7
SE-402-IS-AC3	Sound Examiner SE-402-IS-AC3	70-0716-2303-0
SE-402-R	Sound Examiner SE-402-R	70-0716-2216-4
SE-402-R-AC3	Sound Examiner SE-402-R-AC3	70-0716-2435-0
SE-401	Sound Examiner SE-401	70-0716-0795-9
SE-401-AC3	Sound Examiner SE-401-AC3	70-0716-2113-3
SE-401-IS	Sound Examiner SE-401-IS	70-0716-0793-4
SE-401-IS-AC3	Sound Examiner SE-401-IS-AC3	70-0716-2304-8

Occupational & Environmental Noise

3M™ SoundPro™ SE and DL Series Sound Level Meters and Real-Time Analyzers

The SoundPro™ SE and DL series help provide advanced sound level monitoring and comprehensive data analysis. Available in Class/Type 1 and Class/Type 2 models, these instruments feature large-screen displays that enable real-time frequency analysis, and data-storing capabilities that make it easy to post-process and evaluate workplace noise levels.

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

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	Transreflective 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 stud verification logged with calibration history

Logging and Storage	
Logging	DL Models only. L_{MAX}, L_{MIN}, L_{PK} (peak), 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

Product Number	Description	3M ID
SP-SE-2-AC3	SoundPro SE-2 Sound Level Meter & Calibrator	70-0716-2436-8
SP-SE-2-1/1	SoundPro SE-2 1/1 Octave RTA	70-0715-8003-2
SP-SE-2-1/1-AC3	SoundPro SE-2 1/1 Octave RTA & Calibrator	70-0716-2437-6
SP-SE-2-1/3	SoundPro SE-2 1/1 & 1/3 Octave RTA	70-0715-8004-0
SP-SE-2-1/3-AC3	SoundPro SE-2 1/1 & 1/3 Octave RTA & Calibrator	70-0716-2438-4
SP-SE-1-1/1	SoundPro SE-1 1/1 Octave RTA	70-0715-7997-6
SP-SE-1-1/1-AC3	SoundPro SE-1 1/1-AC3 Octave RTA & Calibrator	70-0716-2107-5
SP-SE-1-1/3	SoundPro SE 1/1 & 1/3 Octave RTA	70-0715-7999-2
SP-SE-1-1/3-AC3	SoundPro SE-1 1/3-AC3 Octave RTA & Calibrator	70-0716-2108-3
SP-DL-2	SoundPro DL-2 Datalogging Sound Level Meter	70-0715-7980-2
SP-DL-2-AC3	SoundPro DL-2 Datalogging Sound Level Meter & Calibrator	70-0716-2439-2
SP-DL-2-1/1	SoundPro DL-2 1/1 Octave Datalogging RTA	70-0715-7981-0
SP-DL-2-1/1-AC3	SoundPro DL-2 1/1 Octave Datalogging RTA & Calibrator	70-0716-2440-0
SP-DL-2-1/3	SoundPro DL-2 1/1 & 1/3 Octave Datalogging RTA	70-0715-7982-8
SP-DL-2-1/3-AC3	SoundPro DL-2 1/1 & 1/3 Octave Datalogging RTA & Calibrator	70-0716-2441-8
SP-DL-1	SoundPro DL-1 Datalogging Sound Level Meter	70-0715-7974-5
SP-DL-1-AC3	SoundPro DL-1 Datalogging Sound Level Meter & Calibrator	70-0716-2106-7
SP-DL-1-1/1	SoundPro DL-1 1/1 Octave Datalogging RTA	70-0715-7975-2
SP-DL-1-1/1-AC3	SoundPro DL-1 1/1 Octave Datalogging RTA & Calibrator	70-0716-2104-2
SP-DL-1-1/3	SoundPro DL-1 1/1 & 1/3 Octave Datalogging RTA	70-0715-7977-8
SP-DL-1-1/3-AC3	SoundPro DL-1 1/1 & 1/3 Octave Datalogging RTA & Calibrator	70-0716-2105-9

3M™ Edge Personal Noise Dosimeters

The Edge dosimeter offers a compact frame for a lighter, more ergonomic way to monitor noise levels. This innovative dosimeter weighs only 3 ounces and features a thin, contoured shoulder mount. The Edge eg4 has dual dosimeters and data logging/time history. The Edge eg5 has intrinsic safety approvals, and when used with 3M™ Detection Management Software (DMS), users can activate a third independent dosimeter, allowing for simultaneous measurement against three industry standards.

Comfortable

- Compact, 3-ounce (85 grams) unit mounts easily to the shoulder
- Ergonomic design helps assure comfort

Intuitive

- Large display with easy-to-use interface provides crucial information at a glance
- The Edge eg5 offers three independent dosimeters that can simultaneously measure against separate industry standards, all in one compact unit

Certified

- Monitor can safely perform in potentially hazardous environments
- The Edge eg5 meets MSHA, SIRA (ATEX), CSA (US/Canada) and Simtars (IECEx) intrinsic safety approvals

Functional Requirements	
Microphone:	1/4 inch prepolarized condenser (electret) field replaceable threaded microphone
Measuring Range:	70dB - 140dB
Windscreen:	Rugged foam permanently attached to a threaded mount for maximum protection

Dosimeter	
eg4 has two independent dosimeters. eg5 has three independent dosimeters. Third dosimeter is enabled through Detection Management Software.	
Independent Thresholds:	Selectable from 70dB to 90dB or none
Independent Exchange Rates:	3dB, 4dB or 5dB for each dosimeter
Independent Criterion Levels:	From 70dB to 90dB in 1dB increments

Measurement Settings	
RMS Range:	70dB to 140dB
RMS Weighting:	A or C
RMS Time Response:	Fast or Slow
Frequency Weighting:	A, C, Z

Peak Detector	
Peak Range:	110dB to 143dB
Peak Weighting:	Selectable C or Z for eg4; Selectable A, C, or Z for the eg5 model (Peak is independent of the RMS dosimeter settings)

Displayed Data / Values	
	L_{AVG} or L_{EQ}, Exposure, SPL, Min Level, Dose, TWA, Projected Dose (eg5), Upper Limit (UL), Identity Field (assigns a custom name to The Edge), Current Date, L_{C-A} (eg5), Max Level, SEL (L_{EP}), Threshold (TR), Peak Level, Run Time

Displayed Status Indicators	
	Battery, Run/Pause, Dose Exposure Indicator (Multicolored LED, user selectable), Memory, Overload Indication

Docking Station: Single and Five Bay Versions	
Communications:	Via the EdgeDock and USB to PC
Typical recharge:	2 to 4 hours
Complete instrument	Fits neatly into EdgeDock without removing mounting devices

Power / Electrical	
Battery:	Lithium Polymer (Flat cell)
Battery Life:	eg4 model 60+ hours, eg5 intrinsically safe 40 hours nominal without LED activated
Battery Charge:	Quick charge in EdgeDock in 2 to 4 hours; recommended daily download data with simultaneous battery charging for maximum efficiency
Battery Charge:	180 hours
Battery Charge:	Short haul serial Infrared (SIR) via the EdgeDock

Standards	
ANSI S1.25 Personal Noise Dosimeters	
IEC61252 Personal Sound Exposure Meters	
Intrinsic Safety: (eg5)	EN 60079-0:2006, EN 60079-11:2007, EN 60079-26:2007, IECEx certification number: SIM 08.0012, ATEX Directive 94/9/EC for use in Potentially Explosive Atmosphere xcertification number: Sira 09ATEX2269, CSA International (US and Canada) certificate number: 2283414, MSHA Approval number: 18-A100008-0

Physical	
Weight:	3 ounces (85 grams)
Size:	3.5” long x 2.1” wide x .75” thick (88mm x 53mm x 19mm), eg5 is .82” (21mm) thick
Case Material:	Engineered Polymer
IP Rated	65
Keypad:	4 keys – Up Arrow, Down Arrow, Run/Stop, On/Off, Enter
Display:	128×64 LCD
RoHS Compliant	
Lockable Windscreen	
Alligator Clothing Clip / Suspender Clasp	

Environmental	
Operating Temperature Range:	-10 °C to 50 °C (14 °F to 122 °F)
Storage Temperature Range:	-25 °C to 60 °C (-13 °F to 140 °F)
Humidity Range:	0 to 95% Non-Condensing

Additional Features	
Device Setup:	Easy, quick setup via DMS software in Chinese, Czech, English, French, German, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, and Turkish
Data Logging:	L_{AVG} or L_{EQ}, Max, Peak and Overload Indication at one minute intervals
Calibration times displayed	
Lock out security function (multilevel)	

Product Number	Description	3M ID
eg4	EDGE 4 Noise Dosimeter	70-0715-7926-5
eg4-D	EDGE 4 Noise Dosimeter	70-0715-7927-3
eg4-D-AC3	EDGE 4 Noise Dosimeter and Calibrator	70-0716-2442-6
5eg4-D	5-Pack EDGE 4 Noise Dosimeter	70-0715-8101-4
5eg4-D-AC3	5-Pack EDGE 4 Noise Dosimeter and Calibrator	70-0716-2443-4
10eg4-D-AC3	10 EDGE 4 Value Pack (1 Dock)	70-0716-2444-2
eg5	EDGE 5 Noise Dosimeter	70-0715-7929-9
eg5-D	EDGE 5 Noise Dosimeter	70-0715-7930-7
eg5-D-AC3	EDGE 5 Noise Dosimeter and Calibrator	70-0716-2445-9
5eg5-D	5-Pack EDGE 5 Noise Dosimeter	70-0715-8103-0
5eg5-D-AC3	5-Pack EDGE 5 Noise Dosimeter and Calibrator	70-0716-2446-7
10eg5-D-AC3	10 EDGE 5 Value Pack (1 Dock)	70-0716-2447-5

3M™ Heat Stress Monitors

3M™ QUESTemp° 32/34/36 Area Heat Stress Monitors

The QUESTemp° 32/34/36 is designed to quickly and accurately evaluate potential heat stress environments. It delivers high-performance monitoring through WBGT (Wet Bulb Globe Temperature) sensing technology and the calculation of a WBGT Index value.

Trusted

- Utilizes WBGT (Wet Bulb Globe Temperature) sensing technology; the standard for heat stress management

Versatile

- Traditional wet bulb sensing technology
- Convenient stay time parameters per multiple standards help determine work-rest ratios

Rugged

- IP 54 ingress rating helps protect unit from exposure to dirt, dust, oil and water
- Designed to withstand the rigors of everyday use in demanding environments

Measurement Parameters	QT°32	QT°34	QT°36
Dry bulb, wet bulb and globe temperatures, relative humidity	●	●	●
Air velocity			○
WBGT (indoor) index	●	●	●
WBGT (outdoor) index	●	●	●
Heat index / HUMIDEX	●	●	●
Temperature reading: Celsius or Fahrenheit	●	●	●
Data logging intervals: 1, 2, 5, 10, 15, 30 or 60 minutes		●	●
Event logging mode			
Display languages: Choose from Chinese, Czech, English, French, German, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, and Turkish	●	●	●
Time & date stamping with clock and calendar		●	●
Displayed stay times: ACGIH TLV, U.S. Navy PHEL charts, U.S. Navy/Marine Corp. Ashore Flag Conditions, EPRI action limits (QT°48N excludes EPRI)			●
Head-Torso-Ankle Weighted Average WBGT (optional with tri-sensors)	○	○	○

Sensors	QT°32	QT°34	QT°36
Dry bulb sensor - 1000 Ohm platinum RTD, accuracy and ranges: +/-0.5 from 0° C to 120° C (+/-0.9° F from 32° F to 248° F)	●	●	●
Wet bulb sensor - 1000 Ohm platinum RTD, accuracy and ranges: +/-0.5 from 0° C to 120° C (+/-0.9° F from 32° F to 248° F)	●	●	●
Waterless wet bulb (humidity) sensor, accuracy and ranges: +/-1.1° C (k=2) between 0° C and 80° C (32° F and 176° F)			
Globe sensor - 1000 Ohm platinum RTD, accuracy and ranges: +/-0.5 from 0° C to 120° C (+/-0.9° F from 32° F to 248° F)	●	●	●
Relative humidity sensor, accuracy and ranges: +/-5% from 20 to 95% (non-condensing)	●	●	●
Air velocity probe - omni-directional heated thermistor, accuracy and ranges: +/-(0.1 m/s + 4%) from 0 to 20 m/s			○

Operating Temperature	QT°32	QT°34	QT°36
Sensor assembly: -5° C to 100° C (23° F to 212° F)	●	●	●
Electronics: -5° C to 60° C (23° F to 140° F)	●	●	●

Key: ● Feature or Parameter of Unit ○ Option

Data Management			
	QT°32	QT°34	QT°36
Detection Management Software DMS	●	●	●
Thermal comfort indices in accordance with ISO 7730 Predicted Mean Vote (PMV) and Predicted Percent Dissatisfied (PPD)			○

Output			
	QT°32	QT°34	QT°36
RS-232 serial printer / computer interface; Parallel printer interface		●	●

Power			
All include AC power adapter wall power cube	QT°32	QT°34	QT°36
9V disposable batteries; hours of battery life:	140	140	140
NiMH rechargeable battery; hours of battery life:	300	300	300

Mechanical			
	QT°32	QT°34	QT°36
D-ring with lanyard attachment; allows for hands-free monitoring			
Tripod mount / remote sensor bar; allows for up to 61 m (~200 ft) long distance measurement	●	●	●
IP54 water & dust ingress protection rating	●	●	●
Case size (including mounted sensor assembly) 23.4 × 18.3 × 7.6 cm (9.2” x 7.2” x 3”)	●	●	●
Weight: 1.2 kg (2.6 lb) with mounted sensor assembly	●	●	●

Standards / Approvals			
	QT°32	QT°34	QT°36
Electromagnetic conformance: CE Mark	●	●	●

Key: ● Feature or Parameter of Unit ○ Option

Product Number	Description	3M ID
QT-32	QUESTemp° 32	70-0715-8027-1
QT-32/6	QUESTemp° 32	70-0715-8028-9
QT-34	QUESTemp° 34	70-0715-3363-5
QT-34-3	QUESTemp° 34	70-0715-8032-1
QT-34/6	QUESTemp° 34	70-0715-8031-3
QT-36	QUESTemp° 36	70-0715-8034-7
QT-36-3	QUESTemp° 36	70-0715-8036-2
QT-36/6	QUESTemp° 36	70-0715-8035-4

Additional models available at 3M.com/detection

Heat Stress

3M™ QUESTemp° 44/46/48N Area Waterless Wet Bulb Heat Stress Monitors

The QUESTemp° 44/46/48N utilizes a waterless wet bulb sensor designed for working environments where daily instrument upkeep is difficult. A high-quality humidity sensor and proprietary algorithm perform the calculation of the WBGT values, eliminating the hassle of daily wet bulb maintenance.

Trusted

- Utilizes WBGT (Wet Bulb Globe Temperature) sensing technology; the standard for heat stress management

Versatile

- Waterless wet bulb sensing technology eliminates daily maintenance
- Convenient stay time parameters per multiple standards help determine work/rest ratios

Rugged

- IP 54 ingress rating helps protect unit from exposure to dirt, dust, oil and water
- Designed to withstand the rigors of everyday use in demanding environments

Measurement Parameters	QT°44	QT°46	QT°48N
Dry bulb, wet bulb and globe temperatures, relative humidity	●	●	●
Air velocity		○	
WBGT (indoor) index	●	●	
WBGT (outdoor) index	●	●	●
Heat index / HUMIDEX	●	●	
Temperature reading: Celsius or Fahrenheit	●	●	●
Data logging intervals: 1, 2, 5, 10, 15, 30 or 60 minutes	●	●	●
Event logging mode			●
Display languages: Choose from Chinese, Czech, English, French, German, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, and Turkish	●	●	●
Time & date stamping with clock and calendar	●	●	●
Displayed stay times: ACGIH TLV, U.S. Navy PHEL charts, U.S. Navy/Marine Corp. Ashore Flag Conditions, EPRI action limits (QT°48N excludes EPRI)		●	●
Head-Torso-Ankle Weighted Average WBGT (optional with tri-sensors)	○	○	

Sensors	QT°44	QT°46	QT°48N
Dry bulb sensor - 1000 Ohm platinum RTD, accuracy and ranges: +/-0.5 from 0° C to 120° C (+/-0.9° F from 32° F to 248° F)	●	●	●
Waterless wet bulb (humidity) sensor, accuracy and ranges: +/-1.1° C (k=2) between 0° C and 80° C (32° F and 176° F)	●	●	●
Globe sensor - 1000 Ohm platinum RTD, accuracy and ranges: +/-0.5 from 0° C to 120° C (+/-0.9° F from 32° F to 248° F)	●	●	●
Relative humidity sensor, accuracy and ranges: +/-5% from 20 to 95% (non-condensing)	●	●	●
Air velocity probe - omni-directional heated thermistor, accuracy and ranges: +/-(0.1 m/s + 4%) from 0 to 20 m/s		○	

Operating Temperature	QT°44	QT°46	QT°48N
Sensor assembly: -5° C to 100° C (23° F to 212° F)	●	●	●
Electronics: -5° C to 60° C (23° F to 140° F)	●	●	●

Key: ● Feature or Parameter of Unit ○ Option

Data Management	QT°44	QT°46	QT°48N
Detection Management Software DMS	●	●	●
Thermal comfort indices in accordance with ISO 7730 Predicted Mean Vote (PMV) and Predicted Percent Dissatisfied (PPD)		○	

Output	QT°44	QT°46	QT°48N
RS-232 serial printer / computer interface; Parallel printer interface	●	●	●

Power Source	QT°44	QT°46	QT°48N
All include AC power adapter wall power cube			
9V disposable batteries; hours of battery life:	80	80	80
NiMH rechargeable battery; hours of battery life:	160	160	160

Mechanical	QT°44	QT°46	QT°48N
D-ring with lanyard attachment; allows for hands-free monitoring			●
Tripod mount / remote sensor bar; allows for up to 61 m (~200 ft) long distance measurement	●	●	●
IP54 water & dust ingress protection rating	●	●	●
Case size (including mounted sensor assembly) 23.4 × 18.3 × 7.6 cm (9.2” x 7.2” x 3”)	●	●	●
Weight: 1.2 kg (2.6 lb) with mounted sensor assembly	●	●	●

Standards / Approvals	QT°44	QT°46	QT°48N
Electromagnetic conformance: CE Mark	●	●	●

Key: ● Feature or Parameter of Unit ○ Option

Product Number	Description	3M ID
QT-44	QUESTemp° 44	70-0715-8038-8
QT-46	QUESTemp° 46	70-0715-8040-4
QT-46-3	QUESTemp° 46	70-0715-8041-2
QT-48N	QUESTemp° 48N	70-0715-7952-1

Additional models available at 3M.com/detection

3M™ Environmental Monitoring

Environmental Monitoring

3M™ EVM Series Particulate Mass Concentration & Air Quality Monitors

The EVM-7 measures both particulates and air quality, and helps provide a lower cost of ownership by combining three instruments into one. Its patented dial-in rotary impactors, intuitive user interface and advanced reporting make the EVM-7 an instrument of choice for safety and industrial hygiene professionals worldwide. Additional models include the EVM-3, specializing in direct reading of particulate mass concentrations, and the EVM-4, designed for indoor air quality studies.

Economical

- Particulate, gas and photoionization detector (PID) measurement from a single device
- Compact design means there's less to carry to the job site

Proven

- 90-degree light-scattering laser photometer measures particulates in real time
- Proprietary technology for selecting particulate settings — no need for external cyclones
- Built-in sampling pump allows for gravimetric analysis

User Friendly

- Large, easy-to-read display with trend graphing for measurements
- Time history data logging and compatibility with 3M™ Detection Management Software (DMS) make analysis efficient

General	
Display Languages:	Chinese, Czech, English, French, German, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, and Turkish
User Interface:	10 pushbuttons and 4 softkeys, menu driven
Display Type:	Transreflective 128 X 64 LCD with backlighting
Software Compatibility:	3M™ Detection Management Software DMS
Standards:	CE Mark and RoHS compliant
Particulate Impactors Size Fractions:	PM2.5, PM4, PM10 or TSP (within the instrument's measurement range)
Flow Rate:	1.67 L/min

Storage Conditions	
Temperature:	-20 °C to 60 °C (-4 °F to 140 °F)
Humidity:	0% to 95% RH, non-condensing

Displayed Data	
Measurements:	Level, Minimum, Maximum, Average, Short-Term Exposure Level (STEL), Time Weighted Average (TWA)
Real-Time Measurement:	Once per second display update rate
Time History Data Logging Intervals:	Seconds: 1, 5, 15, 30 / Minutes: 1, 5, 10, 15, 30, 60
Trend Graphing Intervals for All Parameters:	Minutes: 1.5, 3, 15 / Hours: 1.5, 3, 8, 12, 24
Status Indicators:	Battery, Run, Stop, Overload and UnderRange
Averaging Time:	1 to 30 seconds

Operating Conditions	
Temperature Range:	0 °C to 50 °C (32 °F - 122 °F)
Pressure Range:	65 kPa to 108 kPa
Relative Humidity Range:	10% to 90% non-condensing

Physical	
Size:	19 cm X 19 cm X 7 cm (7.5” X 7.5” X 2.75”)
Weight:	1.3 kg (2.9 lb)
Housing:	Static dissipative ABS Polycarbonate housing
Tripod Mount:	Standard photographic mount on bottom, 1/4” - 20 screw heads

Electrical	
Intelligent Sensors:	Auto-detectable when inserted at power-off mode
Battery Pack:	Rechargeable lithium-ion
Battery Life:	Minimum of 8 hours under continuous operation
External DC Power Input:	10 to 16 Volt power inlet (nominal 12V DC) 1.5A
Power Adapter:	Universal AC adapter 100 to 240 Volt AC, 50-60 Hz

Particulates	Base Units	Display Resolution	Display Range	Repeatability Accuracy
90° Light Scattering / Integrating Photometer	mg / m3	0.001	0.000 - 200.0	+/-15% (rel ARD*)
	µg / m3	1	0 - 20,000	+/-15% (rel ARD*)
Particulates Size Range	µm	N/A	0.1 - 10	**

VOC: 10.6eV Photoionization Detector	Base Units	Display Resolution	Display Range	Repeatability Accuracy
Low Sensitivity PID	select ppb or mg / m3	0.01	0.00 - 2,000	+/-5% / 2%*** at calibration level
High Sensitivity PID	select ppb or µg / m3	1	0 - 50,000	+/-5% / 2%*** at calibration level

CO_2	Base Units	Display Resolution	Display Range	Repeatability Accuracy
NDIR (Non-Dispersive Infrared)	ppm	1	0 - 5,000 ppm; auto-ranging (Non-condensing)	+/-100 ppm @20 deg C, 1 bar pressure at 2,000 ppm applied gas

Electrochemical Sensor	Base Units	Display Resolution	Display Range	Repeatability Accuracy
CO - Carbon Monoxide Sensor	ppm	1	0 - 1,000	+/-5% / 2% of signal
Cl2 - Chlorine Sensor	ppm	0.1	0.0 - 20	+/-5% / 2% of signal
EtO - Ethylene Oxide Sensor	ppm	0.1	0.0 - 20	+/-5% / 2% of signal
HCN - Hydrogen Cyanide Sensor	ppm	0.1	0.0 - 50	+/-5% / 2% of signal
H_2S - Hydrogen Sulfide Sensor	ppm	1	0 - 500	+/-5% / 2% of signal
NO - Nitric Oxide Sensor	ppm	1	0 - 500	+/-5% / 2% of signal
NO - Nitric Oxide Sensor	ppm	0.1	0.0 - 100	+/-5% / 2% of signal
NO_2 - Nitrogen Dioxide Sensor	ppm	0.1	0.0 - 50	+/-5% / 2% of signal
O2 - Oxygen Sensor	%	0.1	0.0 - 30	+/-5% / 2% of signal
SO_2 - Sulfur Dioxide Sensor	ppm	0.1	0.0 - 50	+/-5% / 2% of signal

Temperature	Base Units	Display Resolution	Display Range	Repeatability Accuracy
Junction Diode	deg C	0.1	0.0 - 60.0	+/- 1.1 deg C
	deg F	0.1	32.0 - 140	+/- 2 deg F

Relative Humidity	Base Units	Display Resolution	Display Range	Repeatability Accuracy
Capacitive	% humidity	0.1	0.0 - 100	+/-5% RH* of signal between 10%-90%

Air Velocity	Base Units	Display Resolution	Display Range	Repeatability Accuracy
Omni-directional Heated Thermistor Windprobe	meter/ sec	0.1	0.0 - 20	+/-0.12 m/s +4.5% of signal
	feet/ min	1	0 - 3940	+/-23.6 ft/min +4.5% of signal

* ARD - Arizona Road Dust, RH - Relative Humidity
** The photometer can detect particulates up to 100 µm; however, accuracy is reduced for sizes greater than 10 µm.
*** Relative Isobutylene

Product Number	Description	3M ID
EVM-7/CO	EVM-7 Advanced Particulate and Air Quality Monitor with CO Sensor	70071580123
EVM-7	EVM-7 Advanced Particulate and Air Quality Monitor	70071580131
EVM-7/CO-PPB	EVM-7 Advanced Particulate and Air Quality Monitor with CO Sensor	70071587110
EVM-7-PPB	EVM-7 Advanced Particulate and Air Quality Monitor	70071587128
EVM-4/CO	EVM-4 Indoor Air Quality Monitor with CO Sensor	70071580149
EVM-4	EVM-4 Indoor Air Quality Monitor	70071580156
EVM-3	EVM-3 Real-Time Direct Reading Particulate Monitor	70071580164

3M™ Data Management & Analysis

Data Management & Analysis

3M™ Detection Management Software (DMS)

Once you've detected the level of noise exposure, 3M™ Detection Management Software (DMS) allows you to centrally organize and access the information through our user-friendly software. It's data management made easy. DMS works with 3M™ Detection Solutions data-logging instruments to allow for recording, reporting, charting and analyzing exposures to a variety of occupational and environmental hazards. Easy to learn with icon-driven navigation, DMS provides a simplified user experience and a powerful, consistent software platform across multiple sites.

Convenient

- Centrally organize and access exposure data
- Retrieve, download, share and save instrument data
- Provides consistent software platform for multi-site organizations

Instinctive

- Icon-driven navigation provides simplified user experience
- Easy to learn and use without extensive training

Powerful

- Perform "what if" analysis and recalculate data based on selected time intervals
- Generate insightful charts, graphs and reports
- Set up instruments and check for firmware updates
- Template-driven reports make it easy to determine what data to include

System Requirements	
	Pentium 4, 3GHz or later
	2GB RAM
	Windows XP, SP2 or later, Windows 7, 8, 10, both 32 and 64 bit systems
	1280 × 1024 pixels x 32-bit color display
	70-135 MB of disk space, depending on previously installed components
	Keyboard
	Mouse or pointing device

Supported Languages	
	Chinese, Czech, English, French, German, Italian, Japanese, Korean, Norwegian, Polish, Portuguese, Russian, Spanish, Swedish and Turkish

Product Number	Description	3M ID
DMS	Detection Management Software	70071608213
DMS USB	Detection Management Software USB Storage Drive	70071624004

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Personal Safety Division
3M Center
Building 235-2NW-70
St. Paul, MN 55144-1000
1-800-362-3550
www.3M.com/detection

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