

Larson Davis Selection & Configuration Guide



Why buy Larson Davis?

- Backed by Total Customer Satisfaction, TCS
- Excellent technical support
- Pattern approval (type approval) to ensure performance
- Configurations for varied needs
- Sound Level Meter can be repurposed
- Complete solutions



Three categories of Noise Monitoring Systems



Portable

- Typically 30 days or less monitoring
- Battery or AC powered
- Remote communication may not be needed



Semi-Permanent

- Typically 1 month to several years monitoring
- AC or solar powered
- Remote communication common



Permanent

- Monitoring one location for many years (up to 20)
- AC or solar powered
- Remote communication

Battery Operated NMS Overview

Configuration	Battery	LxT runtime (typical)	831 Runtime (typical)	Size	Weight	Cost
Internal batteries	Alkaline	16 hours	13 hours	Smallest	Lightest	\$
Internal batteries	Lithium	30 hours	24 hours	Smallest	Lightest	\$\$
EPS042	Alkaline (8 x D-cell)	17 days	9 days	Small	Light	\$\$\$
EPS030	Lead Acid (21 Ah)	6 days	6 days	Med	Medium	\$\$\$\$
EPS036-LxT EPS036-831	Lead Acid (2 x 21 Ah)	14 days	14 days	Large	Heavy	\$\$\$\$
EPS037-LxT EPS037-831	Lead Acid (100 Ah)	28 days	28 days	Large	Heaviest	\$\$\$\$

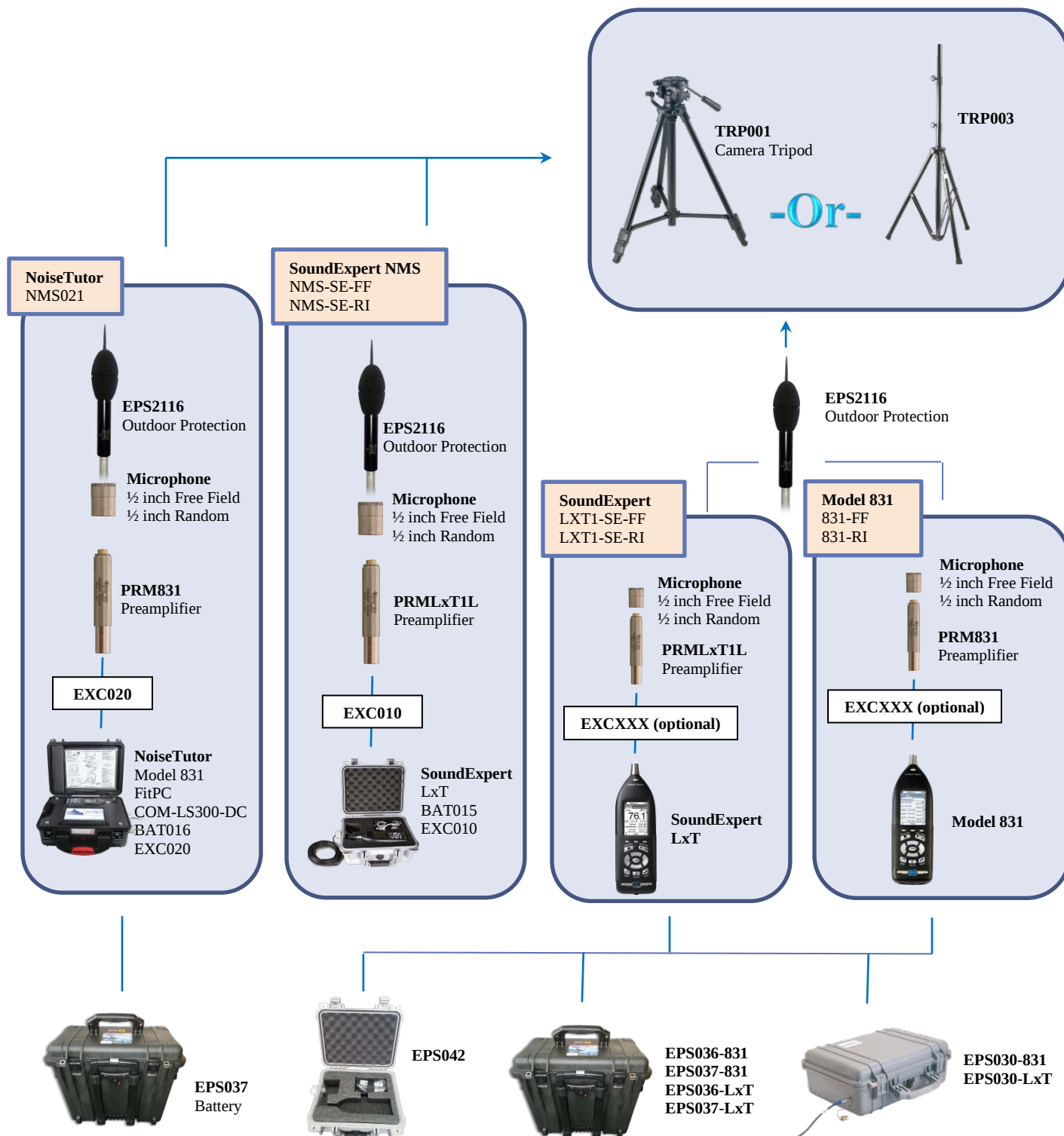
Selection & Configuration Guide

Portable NMS Selection Guide

Feature	NoiseTutor	SoundExpert NMS	SoundExpert LxT	Model 831
Network communication (cellular, WiFi or wired)	✓			
Publish data to a website	✓			
Onboard event detection	✓			Optional (831-ELA)
Sound Recording	✓			Optional (831-SR)
Efficient battery operation		✓	✓	
Low cost		✓	✓	
Pre-configured system	✓	✓		
Customizable product				✓
1/1 & 1/3 octave filters	✓	✓	✓	Optional (831-OB3)
Data Logging	✓	✓	✓	Optional (831-LOG)
Community Noise	✓	✓	✓	✓
Measurement History	✓	✓	✓	Optional (831-ELA)
Percentile (Ln)	✓	✓	✓	✓
Power	AC w/backup	Battery	AC or DC	AC or DC

Selection & Configuration Guide

Portable NMS Configuration Guide



Selection & Configuration Guide

Semi-Permanent NMS Selection Guide

Feature	NoiseTutor	Model 831
Network communication (cellular, WiFi or wired)	✓	Optional (831-INT-ET)
Publish data to a website	✓	
Calibration check with PRM2103-FF	Standard with NMS022	✓
Low power		✓
Low cost	✓	
Event detection in Model 831	✓	Optional (831-ELA)
Events displayed in website	Optional (SWW-DNA-NT-EV)	
Event Audio in Model 831	Optional (831-SR)	Optional (831-SR)
Event Audio on website	Optional (SWW-DNA-NT-CS)	
1/1 & 1/3 octave filters	✓	Optional (831-OB3)
Data Logging	✓	Optional (831-LOG)
Community Noise	✓	✓
Measurement History	✓	Optional (831-ELA)
Percentile (Ln)	✓	✓
Power	AC w/battery backup	AC or DC
Weather	Optional	Optional (831-WTHR)
GPS for time and position		Optional (GPS001)

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The diagram illustrates the NoiseTutor NMS022 system components and their connections. The central component is the **NoiseTutor NMS022**, which is connected to various sensors and power sources.

Components and Connections:

- Weather Station:** **SEN031 Weather** sensor connected to **TRP021 Weather mount**.
- Protection and Adapter:** **EPS2116 Outdoor Protection** and **ADP100 Adapter** connected to the main system.
- Power and Security:** **EPS033 Security Belt** and **CUSTOM-101 Solar Power** connected to the main system.
- Antenna and Guy Wires:** **TRP020-XXX w/ EPS031 or EPS043 for NoiseTutor** connected to **TRP020-KIT10, TRP020-KIT15, TRP020-KIT20 Guy Wires**.
- Pre-amplifier:** **PRM2103-FF Preamplifier** connected to the main system.
- Cellular Gateway:** **COM-LS300-DC 3G Cellular Gateway** and **COM-GX450-xxx-DC 4G Cellular Gateway** connected to the main system.
- Antenna:** **M-ANT-HG gain antenna des cable** connected to the main system.
- GPS:** **GPS001 GPS Receiver** connected to the main system.
- Display:** **831 831-INT-ET** connected to the main system.
- Power Source:** **CBL167 DVX008A** connected to the main system.

Alternative Configuration:

- ADP100 Adapter** connected to **TRP020-06, TRP020-10, TRP020-15, TRP020-20** or **TRP003**.
- TRP020-06, TRP020-10, TRP020-15, TRP020-20** or **TRP003** connected to **TRP020-KIT10, TRP020-KIT15, TRP020-KIT20 Guy Wires**.
- TRP020-KIT10, TRP020-KIT15, TRP020-KIT20 Guy Wires** connected to **TRP020-XXX w/ EPS031 or EPS043 for NoiseTutor**.
- TRP020-XXX w/ EPS031 or EPS043 for NoiseTutor** connected to **TRP020-KIT10, TRP020-KIT15, TRP020-KIT20 Guy Wires**.
- TRP020-KIT10, TRP020-KIT15, TRP020-KIT20 Guy Wires** connected to **TRP020-06, TRP020-10, TRP020-15, TRP020-20** or **TRP003**.
- TRP020-06, TRP020-10, TRP020-15, TRP020-20** or **TRP003** connected to **ADP100 Adapter**.

System Overview:

- NoiseTutor NMS022** is the central hub.
- PRM2103-FF Preamplifier** is connected to the main system.
- CBL208-20** is connected to the main system.
- CBL203-20 (incl)** is connected to the main system.
- NoiseTutor** is connected to the main system.
- 831 831-INT-ET** is connected to the main system.
- GPS001 GPS Receiver** is connected to the main system.
- COM-LS300-DC 3G Cellular Gateway** and **COM-GX450-xxx-DC 4G Cellular Gateway** are connected to the main system.
- M-ANT-HG gain antenna des cable** is connected to the main system.
- CUSTOM-101 Solar Power** is connected to the main system.
- EPS033 Security Belt** is connected to the main system.
- ADP100 Adapter** is connected to the main system.
- TRP020-XXX w/ EPS031 or EPS043 for NoiseTutor** is connected to the main system.
- TRP020-KIT10, TRP020-KIT15, TRP020-KIT20 Guy Wires** are connected to the main system.
- TRP020-06, TRP020-10, TRP020-15, TRP020-20** or **TRP003** are connected to the main system.
- SEN031 Weather** is connected to the main system.
- CBL167 DVX008A** is connected to the main system.

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Permanent NMS Configuration Guide



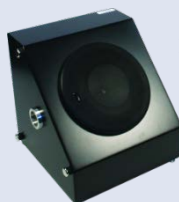
Selection & Configuration Guide

Room & Building Acoustic Configuration Guide

BAS005-E
BAS005-U



BAS001
Dodecahedral
Speaker



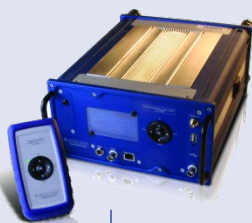
BAS003
Directional Speaker



BAS004
Tapping Machine



TRP023
Speaker Tripod



BAS002-U
BAS002-E
Amplifier



CBL180
831 AC out to BNC

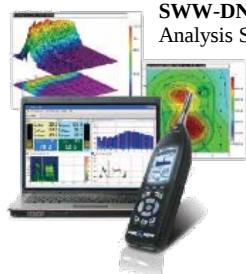


CBL181
50 ft BNC-BNC cable

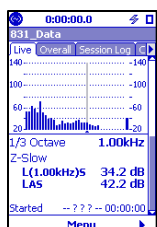


CBL182
Speakon cable

CBL182



SWW-DNA
SWW-DNA-831
SWW-DNA-BA
Analysis Software



831-OB3
1/1 & 1/3 Octave Filters Option

CBL180



Model 831
831-RT
Class 1
Sound Level
Meter



BAS006
Impulse Generator



TRP001
Camera Tripod

Selection & Configuration Guide

Audiometer Calibration Selection Guide

- 1) Choose ear simulator or coupler depending upon head phone to calibrate
- 2) Choose system, SYS008 – SYS011, with needed couplers and ear simulator
 - a. Additional simulators and couplers can be added to a system

Headphone		AEC100	AEC201	AEC202	AEC203	AEC204	RETSPL	Notes
Ear Tone ER-3A ER-5A				✓ ✓	✓ ✓	✓ ✓	ISO 389-2 table 1 ANSI S3.6 table 7a	
Koss HV/1A			✓ ✓				ISO 389-5 annex B ANSI S3.6 table 6	Use 9-10 N force (970 g mass) and optional AEC201-2
Telephonics TDH-39		✓ ✓	✓ ✓				ISO 389-1 table 1 ISO 389-1 table 2 ANSI S3.6 table 5	Use 4-5 N force (470 g mass)
Telephonics TDH-49		✓	✓ ✓				ISO 389-1 table 2 ANSI S3.6 table 5	Use 4-5 N force (470 g mass)
Telephonics TDH-50		✓	✓ ✓				ISO 389-1 table 2 ANSI S3.6 table 5	Use 4-5 N force (470 g mass)
Sennheiser HDA200			✓ ✓				ISO 389-5 & 389-8 ANSI S3.6 table 6	Use 9-10 N force (970 g mass) and type 1 adapter plate
Sennheiser HDA280		✓	✓ ✓				ISO 389-1 table 2 ANSI S3.6 table 5 Sennheiser	Use 4-5 N force (470 g mass)
Sennheiser HDA300		✓	✓				Sennheiser	Use 4-5 N force (470 g mass)
Beyer DT-48		✓ ✓	✓				ISO 389-1 table 1 ISO 389-1 table 2 ANSI S3.6 table 5	Use 4-5 N force (470 g mass)
Interacoustics DD45		✓	✓				Interacoustics	Use 4-5 N force (470 g mass)
Radio Ear B-71		✓ ✓	✓ ✓				ISO 389-3 ANSI S3.6 table 8	Use 4-5 N force (470 g mass) and optional AMC493B weighting mass

AEC Key Specifications

Coupler	AEC100	AEC201-A	AEC202	AEC203	AEC204
Description	NBS 9-A (6 cc) Coupler	Ear Simulator	1/2 in. 2cc Coupler	1 in. 2cc Coupler	IEC711 Ear Simulator
Standards Compliance	IEC 60318-3:1998	IEC 60318-1:2009 IEC 60318-2:1998	IEC 60318-5:2006	IEC 60318-5:2006	IEC 60318-4:2010
	ANSI S3.7-1995	ANSI S3.7-1995 Section 5.4	ANSI S3.7-1995	ANSI S3.7-1995	-
ANSI S3.6 Test Configuration	-	-	With or without ear mold substitute	With ear mold substitute	-
Effective Volume	6 cc		2 cc	2 cc	
Microphone	1 in. LD 2575 (not included)	1/2 in. 377A13 (included)	1/2 in. 377A13 or 377B11 (not included)	1 in. LD 2575 (not included)	1/2 in. 377A13 (included)
Included Accessories	Vibration isolation pillow	Vibration isolation pillow	0.035 in. hex key, acoustic tubing #13 thick	acoustic tubing #13 thick	-
Applications			Invisible In Canal, Completely In Canal, In The Canal, In The Ear, Receiver In Canal, Behind The Ear	Behind The Ear BTE	In The Canal In The Ear Receiver In Canal

Selection & Configuration Guide

Audiometer Calibration Configuration Guide

SYS008 Audiometer Cal Kit



SYS009 Audiometer Cal Kit



SYS010 Audiometer Cal Kit



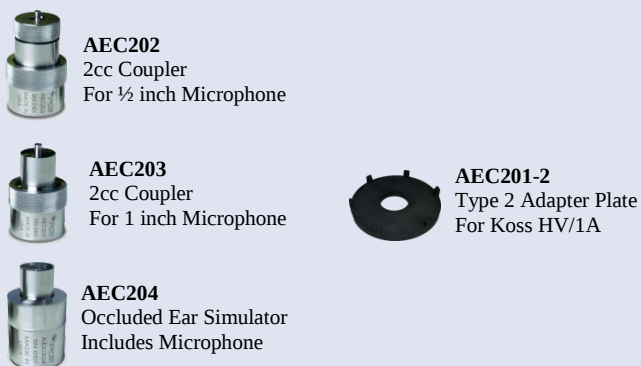
SYS011 Audiometer Cal Kit



Common Items



Optional Accessories



SYSTEM 824S
Sound Level Meter
Class 1
824-AUD firmware

Selection & Configuration Guide

Human Vibration Configuration Guide (HVM200)

Hand -Arm Vibration

ADP084A
Adapter kit

ADP080A
Hand Adapter

ADP081A
Handle Adapter

ADP082A
Clamp Adapter

ADP063
Palm Adapter

SEN040F (Impulsive machines)
0.1 mV/(m/s²) triaxial Accelerometer

SEN041F (Rotating machines)
1 mV/(m/s²) triaxial Accelerometer

OR

5-40 Female mount thread

SEN026
1 mV/(m/s²) triaxial Accelerometer

CBL216
4-pin mini to 4-pin ¼-28

Whole Body Vibration

SEN027
Triaxial Seat Pad Sensor



General Vibration

SEN020
0.1 mV/(m/s²) triaxial Accelerometer

CBL217-05
4-pin, ¼-28 to 4-pin ¼-28

10-32 female mount

HVM200
Human Vibration Meter



Included Accessories

PSA035
Power supply

Universal USB Power supply

Adapter kit

CBL218
USB cable

CBL217-01 (30 cm)
4-pin (¼-28) to 4-pin (¼-28)

8 GB data memory

Optional Accessories

CCS047
Hard Shell Case

CCS048-L or -S
Arm Band

394C06
Hand held Shaker
9.8 m/s² @ 159.2 Hz

SWW-G4-HVM
G4 license for
HVM200 & HVM100



Selection & Configuration Guide

Human Vibration Configuration Guide (HVM200)

HVM200 Bundled Systems

HVM200-HA-40F or HVM200-HA-41F Hand-arm vibration kit

HVM200
Human Vibration Meter



CCS047
Hard Shell Case



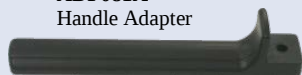
CCS048-L
Large Arm Band



SWW-G4-HVM
G4 license for
HVM200 & HVM100



ADP081A
Handle Adapter



SEN040F (Impulsive machines)
0.1 mV/(m/s²) triaxial Accelerometer



OR

SEN041F (Rotating machines)
1 mV/(m/s²) triaxial Accelerometer



HVM200-WB Whole body vibration kit

SEN027
Triaxial Seat Pad Sensor



HVM200
Human Vibration Meter



CCS047
Hard Shell Case



SWW-G4-HVM
G4 license for
HVM200 & HVM100



HVM200-ALL-40F or HVM200-ALL-41F Hand-arm & whole body vibration kit

CCS047
Hard Shell Case



CCS048-L
Large Arm Band



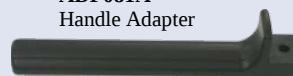
HVM200
Human Vibration Meter



SWW-G4-HVM
G4 license for
HVM200 & HVM100



ADP081A
Handle Adapter



SEN027
Triaxial Seat Pad Sensor



SEN040F (Impulsive machines)
0.1 mV/(m/s²) triaxial Accelerometer



OR

SEN041F (Rotating machines)
1 mV/(m/s²) triaxial Accelerometer



Selection & Configuration Guide

Noise Dosimeter Selection Guide

Kit Part Number	Base  703+ (Qty)	Rugged  705+ (Qty)	Full Featured  706RC (Qty)	Hard Carrying Case (Model)	Soft Case  CCS018 (Qty)	Acoustic Calibrator  CAL150 ADP031 (Qty)	IR Dongle  DVX010 (Qty)	PC Software  SWW-BLAZE (Qty)	Windscreen  WS006 (Qty)	Microphone Clip  ACC002 (Qty)
	Dosimeters				Accessories					
703P	1				1				1	1
703P-PK1	1				1		1	1	1	1
703P-PK2	1			CCS021	1	1	1	1	1	1
703P-PK3	5				5		1	1	5	5
703P-PK4	5			CCS019	5	1	1	1	5	5
703P-PK5	4		1	CCS019	5	1	1	1	5	5
705P		1							1	1
705P-PK1		1					1	1	1	1
705P-PK2		1		CCS022		1	1	1	1	1
705P-PK3		5					1	1	5	5
705P-PK4		5		CCS023		1	1	1	5	5
705P-PK5		4	1	CCS023		1	1	1	5	5
705P-PK6		5	1	CCS023		1	1	1	6	6
705P-PK7		10		CCS024		1	1	1	10	10
705P-PK8		10	1	CCS024		1	1	1	11	11
706RC			1		1				1	1
706RC-PK1			1		1		1	1	1	1
706RC-PK2			1	CCS021	1	1	1	1	1	1
706RC-PK4			5	CCS019	5	1	1	1	5	5

Accessories



Selection & Configuration Guide

SoundTrack LxT and Model 831 Product Comparison

20-May-14

Feature	SoundTrack LxT	SoundExpert LxT	Model 831
Hardware			
Class (IEC 61672-1)	Class 1 - LXT1 (PRMLXT1) and LXT1L (PRMLXT1L) Class 2 - LXT2 (PRMLXT2B) and LXT2L (PRMLXT2L)	Class 1 - (PRMLXT1L)	Class 1 (PRM831)
Microphone	Class 1, ½ in., Free-field (Model 377B02) Class 1, ½ in., Random (Model 377B20) Class 1, ¼ in., Free-field (Model 377C01) Class 1, ¼ in., Pressure (Model 377C10) Class 2, ½ in., Free-field (Model 375B02)	Class 1, ½ in., Free-field (Model 377B02) Class 1, ½ in., Random (Model 377B20)	Class 1, ½ in., Free-field (Model 377B02) Class 1, ½ in., Random (Model 377B20) Class 1, ¼ in., Free-field (Model 377C01) Class 1, ¼ in., Pressure (Model 377C10)
Reported Metrics	Selected frequency and Time weighing	Selected frequency and Time weighing	AnyData - User selects viewed data on display like large digit
Internal Battery Charger	N/A	N/A	Included for NiMh cells
External Power	USB	USB	USB and 12V with auto shutdown/start-up
Runtime - typical (backlight off, 25 °C)	18 hr Alkaline, 30 hr Lithium	18 hr Alkaline, 30 hr Lithium	12 hr Alkaline, 24 hr Lithium
Memory	Standard: 2 GB internal flash External USB memory support	Standard: 2GB internal flash External USB memory support	Standard: 2GB internal flash External USB memory support
Included Accessories	Alkaline Batteries, Windscreen (WS001) Lanyard	AC Power Supply (PSA029), Alkaline batteries, USB Cable (CBL138), Windscreen (WS001), Lanyard	AC Power Supply (PSA029), Rechargeable batteries, Pelican case (831-CCS), USB Cable (CBL138), Windscreen (WS001), Lanyard
Optional Sensors	N/A	N/A	PRM2103 or 426A12 Outdoor Preamplifier, ICP using APD074 adapter, GPS using GPS001, Weather using SEN031 (Vaisala WXT520 & 831-WTHR)
Communications	USB direct, USB Memory	USB direct, USB Memory	USB direct, USB Memory, Serial (w/DVX008A), Analog Modem (MDMUSB-A & 831-MDM), Wireless (MDMUSB-E & 831-COMM), TCP/IP (831-INT-ET)
Keypad	Elastomeric	Elastomeric	Elastomeric with back lighting
Clock Stability	±5s / day max	±5s / day max	±1s / day max
Temperature Range	-10 °C to 50 °C	-10 °C to 50 °C	-10 °C to 50 °C -40 °C to 70 °C with optional (CER-831-E)
Preamplifier Cable Drive	200 ft (60 m)	200 ft (60 m)	300 ft (100 m)
Software and Firmware			
Voice Annotation	Optional with LXT-DVA	N/A	Standard
Data Logging	LXT-LOG - Log 20 parameters, 1/s LXT-HSLOG (Option for 100 ms samples)	Included to log 20 parameters up to 1/s	831-LOG (Option to log 47 parameters, 20 ms) 831-FST (Option to log OBA, 2.5 ms)
1/1 Octave Filters	Optional (LXT-OB1) - No Spectral Ln	Included	Included with 831-OB3
1/3 Octave Filters	Optional (LXT-OB3) - No Spectral Ln	Included	Optional (831-OB3) - Includes Spectral Ln
Intervals	Optional (LXT-ENV)	Included	Optional (831-ELA)
Event Logging	N/A	N/A	Optional (831-ELA)
Sound Recording	N/A	N/A	Optional (831-SR)
Industrial Hygiene	Standard	N/A	Optional (831-IH)
Reverb Time	N/A	N/A	Optional (831-RT)
FFT narrowband analysis	N/A	N/A	Optional (831-FFT)
Blaze Support	Yes except LXT-LOG	No	No
SLM Utility G3 Support	Yes	Yes	Yes
DNA Support	Yes	Yes	Yes