



SCARLET | TECH

Professional Class 1 Sound Level Meter

ST-12D



- IEC 61672-1: 2013 Class 1
- Easy-to-use interface
- Precise audio recording
- 2.4" full-color display
- Synchronous multi sound analyzers
- Leq value with A/C/Z frequency weightings

Overview

ST-12D is a high-precision Class 1 sound level meter, ideal for professionals requiring accurate noise assessment. ST-12D measures comprehensive noise parameters with integral, statistical and spectral sound analyzers, offering users a powerful and versatile noise measurement solution. For long-term outdoor monitoring, an optional waterproof outdoor kit is available, along with LED signage for real-time noise data display.

Parameter	Value
LCFp	= 59.7dB
LCeq,t	= 56.5dB
LCFmax	= 59.7dB
LCFmin	= 43.0dB
LCeq,T	= 51.6dB
LCpeak	= 66.3dB
LCE	= 60.0dB
E	= 0.00Pa²h

Buttons: Tm=00h00m10s, C, F, Run

Integral Analysis

Parameter	Value
LAFp	= 33.1dB
LAeq, T	= 58.4dB
LAFmax	= 76.1dB
LAFmin	= 32.2dB
L5	= 64.3dB
L10	= 47.3dB
L50	= 32.9dB
L90	= 32.4dB
L95	= 32.4dB
LAE	= 66.5dB
SD	= 9.3dB

Buttons: Tm=00h00m06s, A, F, Run

Statistics Analysis

Frequency	Lp	Lmax	Lmin	Leq,T
SPL(A)	40.7	89.6	39.1	76.7
SPL(C)	49.7	89.0	45.6	76.1
SPL(L)	57.9	89.0	52.4	76.1
10Hz	45.1	45.1	24.0	41.4
12.5Hz	47.0	51.0	35.0	47.6
16Hz	52.2	53.4	37.0	49.6
20Hz	49.6	50.8	35.8	46.6
25Hz	41.9	42.0	31.8	39.2
31.5Hz	41.5	41.5	11.0	37.6
40Hz	33.8	36.7	19.3	32.6
50Hz	31.3	36.8	21.7	30.7
63Hz	35.8	39.1	23.5	34.2
80Hz	28.8	48.8	17.6	37.9
100Hz	30.0	52.1	21.1	41.2
125Hz	32.6	56.9	25.4	44.2

Buttons: Tm=00h00m10s, Z, F, Run

Octave Band Analysis

Comprehensive Acoustic Analysis

- Class 1 compliance with IEC 61672:2013 standard
- Integral analysis:
 - $L_{xy,p}$, $L_{xy,max}$, $L_{xy,min}$, $L_{x,eq,T}$, $L_{x,eq,t}$, $L_{x,peak}$, $L_{x,E}$, E
 - X = A, C, Z
 - Y = F, S, I, I10
- Statistical analysis:
 - $L_{xy,p}$, $L_{xy,max}$, $L_{xy,min}$, $L_{x,eq,T}$, $L_{x,E}$
 - LN (N=1~99) : L5, L10, L50, L90, L95, SD, Ldn, Ld, Ln
- Exposure analysis: E, TWA, Lex, 8h, Lavg, DOSE
- 1/1 or 1/3 Octave Band Analysis (Optional):
 - $L_{x,p}$, Lmax, Lmin, Leq, T
 - Center frequency range: 10 Hz ~ 20 kHz

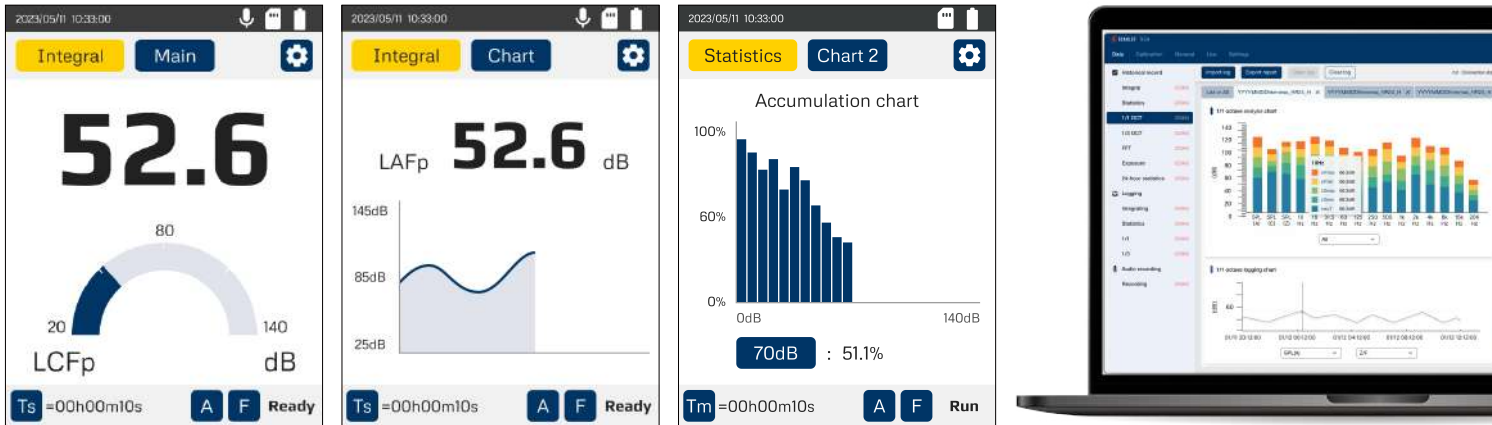


Data Storage & Management

- Large memory & storage: Internal 4 GB and up to 64 GB via SD card.
- Data export & connectivity: USB-C and serial ports allow data retrieval and integration with your system, as well as an AC/DC port for analog signal output.
- Audio recording: MP3 or WAV formats, with adjustable sampling rates (12 kHz, 24 kHz, 48 kHz).
- Long battery life: 24+ hours on 4 AA batteries, with external power supply via USB-C

Various display modes

The ST-12D provides a 2.4 inch full-color display of sound pressure levels in both list and chart formats. The user-friendly interface makes it easy with adjustable brightness, intuitive navigation, and status indicators. ST-12D comes with PC software that enables viewing real-time noise data and all historical records directly on a computer.



Calibration

ST-12D features easy-to-perform calibration using a 1 kHz Class 1 sound calibrator, such as the ST-120. Calibration can be conducted before and after measurement to uphold Class 1 accuracy, critical for compliance and quality assurance.

Instant Data Printing

Equipped with Bluetooth connectivity, the ST-12D allows for quick printing of measurement results. Once paired with a compatible Bluetooth printer, users can print reports after each measurement or choose manual print for specific data points.

Applications



Environmental Noise Assessment: Accurately measure ambient noise levels, to help identify and mitigate noise pollution.

Outdoor Waterproof Monitoring: Durable setup protects device from harsh weather conditions & ensures obstacle prevention.

Public Sound Level Displays: Connects to LED signage, allowing everyone to easily notice when noise levels exceeded.

Package Contents

- ST-12D Class 1 sound level meter
- Windscreen
- USB-C cable
- RS232 cable
- AA batteries
- Calibration certificate
- User manual
- Waterproof carrying case



Optional Accessories

	Class 1 Sound Calibrator	<ul style="list-style-type: none">• IEC 60942 Class 1 / ANSI S1.40-1984 standards accuracy• For 1/2" condenser microphone calibration• Stably output sound level at 94dB & 114dB
	Portable Thermal Printer	<ul style="list-style-type: none">• Thermal printing of measurement results• Supports wireless pairing with ST-12D via Bluetooth or cable
	Microphone Extension Cable	<ul style="list-style-type: none">• Available in 2.5m & 5m lengths• Allows the microphone to be positioned away from the meter• Fits between the meter top and the preamplifier
	Outdoor Kit	<ul style="list-style-type: none">• Ideal for long-term outdoor noise monitoring• IP65 waterproof handy case keeps the SLM protected• Content includes: outdoor windshield, power bank, microphone extension cable

Specifications

Model	ST-12D
Fulfils Standard	IEC 61672-1: 2013 Class 1
Dimensions	250 × 76 × 33mm
Weight	340 g
Display	2.4-inch 240 × 320 pixel full-color display Adjustable brightness & backlight can be turned off.
Display Resolution	0.1 dB
Refresh Rate	0.5 s
Main Parameters of Measurement	LXYp, LXYmax, LXYmin, LXeq, LXeq,T, LXeq,t, LXpeak, L5, L10, L50, L90, L95, SD, Ld, Ln, Ldn, SEL, LXE, E, TWA, Lex, 8h, LAVG, DOSE X = A, C, Z Y = F, S, I, I10
Measurement Range	25 ~ 140 dB (143 dB C Peak)
Accuracy	± 0.5 dB
Frequency Range	10 Hz ~ 20 kHz
Frequency Weighting	A, C, Z
Time Weighting	F, S, I, I10
Integrating Time	1s ~ 99 h 59 m 59 s
Audio Recording	Record noise data in MP3/WAV format Synchronize/Trigger mode Sampling rate: 12 kHz, 24 kHz, 48 kHz / 16 bit, 24 bit
Storage Capacity	4 GB internal memory 64 GB SD card
Output Interface	AC/DC signal (analog) UART Serial (RS-232) USB Type-C (structured data in JSON format) Bluetooth (for portable printer)
Power Supply	4 x AA alkaline batteries External power supply (USB type-C adapter): 5V, 1A
Operation Time	Max 24hrs by 4 x AA alkaline batteries (The operation time varies depending on the device settings and battery type)
Operation Environment	Working temperature: -20 ~ 60 °C Relative humidity: 20% ~ 90%



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