Noise Dose Meter

SIAFA®
Higiene Ocupacional y Medio Ambiente

SL-1256DOS

Model: SL-1256DOS

Applications

The personal noise dose meter is test equipment to evaluate the noise condition of working environment by measuring the accumulated noise exposure. With this test data, company can ensure the related noise regulation is followed or decide whether or not to apply certain noise reduction action to avoid the acoustic trauma and noise-induced hearing loss occurs to the working personnel.
This Noise Dose Meter meets the GB/T 15952 standard.

Principle

DOSE is a parameter used to quantify noise exposure measured in a period, during turns of % noise exposure relative to 90dBA for 8 hours.
i.e. 100% DOSE = 90dBA for 8 hours
This is known as the Criterion. Other criterion are available such as 100% DOSE = 85dBA for 8 hours to meet legislation in different countries.
If the person stayed in this environment for 4 hours, he would receive 50%DOSE.
Also if the noise level was say 93dBA, 3dB higher, a 100% DOSE would be accumulated in only 4 hours, The above example is for a dose meter with 3dB Exchange Rate, where a 3dB increase in sound level corresponds to a doubling energy. A dose meter with 5dB Exchange Rate is also, available where the sound must increase by 5dB to double the dose as required to meet noise legislation in some countries.

Features

The Noise Dose Meter measure the frequency weighted noise exposures and peak sound levels simultaneously.
* Simple operation, including direct read–out of results.
* Eight built–in standard dose measurement setups : OSHA80, OSHA90, MSHA-80, MSHA-90, DOD, ACGIH, ISO85 and ISO90.
* Nine user – defined measurement setups.
* A single sound level meter (SLM) setup.
* 50 dose (DATA) result stores.
* Download of setups from PC to the meter.
* Keypad lock protects meter against accidental operation.
* Timers support pre–selection of measurement duration.
* Use RS-232 data output to connect with PC.

The meter is two overlapping measurement ranges : 60 – 130 & 70 – 140dB, A & C RMS weightings, Linear & C Peak weightings, Fast & Slow time weightings, and energy exchange rates (Q) of 3, 4, 5 & 6. In dose measurement mode, it display % dose, % dose projected for an 8 hour period, peak level and measurement duration.
For countries that are subject to European Union regulations or the equivalent ISO standards, the meter measure the daily sound exposure level (LAeq,8hr,Pa2h according to IEC 61252, which is identical with the L EX,8h required by ISO 1999), while for USA OSHA/MSHA regulations they measure the Time Weighted Average level (TWA).
When used as a sound level meter it display sound level, time–averaged (L Aeq) sound level, peak and sound exposure level (SEL).
The meter is automatic run timing facilities controlled by the built–in clock and time–history recording capabilities. Sampling times can be specified between 1s and 1 hour, while storage is 120000 data points.
The meter is able to measure and save up to five specified Ln values (Statistical noise levels). Run duration, start and stop times preset, and other setting via the meter keys or software.

Specifications

Standard Applied	IEC61252, ANSI S1.25 – 1992 for dose meter and sound exposure meters. IEC 61672-1-2013 Class 2
Microphone	1/2-inch electret condenser microphone with 31-inch integral cable
Display	Liquid Crystal Display
Measurement Ranges (Linearity and Indicator ranges at 4KHz)	60 – 130 : 60 – 130dB (A and C)
	70 – 140 : 70 – 140dB (A and C)
Peak Ranges (C–weighted or Linear Peak over the top 40dB of each measurement range)	60 – 130 : 93 – 133dB Peak
	70 – 140 : 103 – 143dB Peak
Frequency Weightings	RMS Detector: A or C
	Peak Detector: C or Z (Linear)
Time Weightings	Fast and Slow (RMS detector)
Exchange Rate	3, 4, 5 or 6dB
Stabilization Time	10 seconds from power on
Threshold and Criterion Levels (From the setup, predefined in the built – in setup according to applicable standards)	User–defined setups in the following ranges :
	Threshold Level : 70 – 90dB in 1dB steps
	Criterion Level : 80, 84, 85 or 90dB
Overload Indications	At 0.1dB above the top of the selected measurement range
Under–Range Indications	Under–Range Indications
High Level Detector	115dB
Keypad Lock	Lock and unlock by pressing key combinations: Up and right arrows to lock; left and down arrows to unlock
Clock	Real–time clock with calendar
Memory	Results from 50 measurements can be stored for later viewing and download
Measurement Control	Measurement Duration : May be set to 5, 10, 15, or 30 minutes or 1, 2, 4, 8, 10, 12, or 24 hours
Timers	Up to 16 timers(automatic start and stop)can be set(maximum up to one month ahead of measurement time)
Timer Controlled Started / Stop	Set up from the PC software or meter keypad
Logging	All measurement parameters values can be logged
Logging Period (LP)	1s, 2s, 5s, 10s, 15s, 20s, 30s, 1min, 2min, 5min, 10min, 15min, 20min, 30min or 60min
Logging Capacity	120000 values can be stored at any one time
Setup	Eight built–in (predefined) default setups are included. Nine additional user–defined setups can be stored
Output	USB interface
Power Supply	4x1.5V AAA (UM-4) Battery
Battery Indicator	Symbol indication battery voltage level in 4 steps. Indicator flashes when voltage is insufficient for operation
Operating Temperature & Humidity	0 – 50ºC (32 to 122ºF) ,10 – 90%RH
Storage Temperature & Humidity	-10 – 60ºC(14 to 140ºF) ,10 – 75%RH
Size	140x72x34mm
Weight	Approx. 350g (including batteries)
Standard Accessories	Main Unit
	External Probe
	Carrying Case
	Operation Manual
Optional Accessories	USB Data Cable with Software
	Bluetooth Data Adapter with Software

Setup

Setup	OSHA-80	OSHA-90	MSHA-80	MSHA-90	DOD	ACGIH	ISO-85	ISO-90	User1-9	SLM
Measurement Range (dB)	70–140	70–140	70–140	70–140	70–140	70–140	70–140	70–140	70–140	70–140
Time Weighting	Slow	Slow	Slow	Slow	Slow	Slow	Fast	Fast	Fast	Slow
Frequency Weighting	A	A	A	A	A	A	A	A	A	A
Peak Frequency Weighting	Lin	Lin	Lin	Lin	Lin	Lin	C	C	C	Lin
Exchange Rate	5	5	5	5	4	3	3	3	3	3
Threshold (dB)	80	90	80	90	80	80	70	70	80	N/A
Criterion Level (dB)	90	90	90	90	85	85	85	90	90	N/A
Allow User to Change Setup	No	No	No	No	No	No	No	No	Yes	Yes

Measurement Parameters

OSHA-80	OSHA-90	MSHA-80	MSHA-90	DOD	ACGIH	ISO–85	ISO–90	User1-9	SLM
DOSE%	DOSE%	DOSE%	DOSE%	DOSE%	DOSE%	DOSE%	DOSE%	DOSE%	SPL
PDOSE%	PDOSE%	PDOSE%	PDOSE%	PDOSE%	PDOSE%	PDOSE%	PDOSE%	PDOSE%	MAX
TWA	TWA	TWA	TWA	TWA	LEPd	LEPd	LEPd	TWA	LEQ
PTWA	PTWA	PTWA	PTWA	PTWA	LEQ	LEQ	LEQ	PTWA	LEQ
LAVG	LAVG	LAVG	LAVG	LAVG	SEL	SEL	SEL	LAVG	PKZ
LEQ	LEQ	LEQ	LEQ	LEQ	$SE(Pa^2h)$	$SE(Pa^2h)$	$SE(Pa^2h)$	LEPd	
SEL	SEL	SEL	SEL	SEL	MAX	MAX	MAX	LEQ	
MAX	MAX	MAX	MAX	MAX	PKZ	PKC	PKC	SEL	
PKZ	PKZ	PKZ	PKZ	PKZ	L10	L10	L10	$SE(Pa^2h)$	
L10	L10	L10	L10	L10	L50	L50	L50	MAX	
L50	L50	L50	L50	L50	L90	L90	L90	PKZ	
L90	L90	L90	L90	L90	L95	L95	L95	L10	
L95	L95	L95	L95	L95	L99	L99	L99	L50	
L99	L99	L99	L99	L99	SPL	SPL	SPL	L90	
SPL	SPL	SPL	SPL	SPL				L95	
								99	
								SPL	

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