

SD Card data recorder

NOISE DOSIMETER

Model : DS-2013SD

ISO-9001, CE, IEC1010



LUTRON ELECTRONIC

The Art of Measurement

SD card data recorder

NOISE DOSIMETER

Model : DS-2013SD

FEATURES

* Personal sound exposure meet IEC 61252
* Frequency and Time weighting are designed to meet IEC 61672 class 2.
* A & C weighting networks comply with standards.
* LCD is dot-matrix with backlight and easy reading.
* Combination Dose meter, Data-logger and Sound level meter.
* 0.5" standard microphone head.
* Time weighting (Fast & Slow) dynamic characteristic modes.
* Build External calibration VR.
* User-defined measurement configurations. Selectable Criterion Level.
* Exchange Rate, Threshold, Frequency Weighting, and Response Time setting.
* Condenser microphone for high accuracy & long-term stability.
* Memory function to store the Max. & Min. value.
* Hold functions.
* Real time Datalogger Records device of internal memory device (EEPROM) and an external memory device (SD memory card) ,Real time Datalogger, it Built-in Clock and Calendar, real time data recorder, sampling time set from 1 second to 3600 seconds.
* Manual datalogger is available (set the sampling time to 0 second).
* Innovation and easy operation, computer is not need to setup extra software, after execute datalogger, just take away the SD card from the meter and plug in the SD card into the computer, it can download the all the measured value with the time information (year/month/date/ hour/minute/second) to the Excel directly, then user can make the further data or graphic analysis by themselves.
* SD card capacity : 1 GB to 16 GB.
* Can default auto power off or manual power off.
* Noise Dose % · SPL measurements.
* Microcomputer circuit, high accuracy.
* Power by UM4/AAA (1.5 V) x 6 batteries or DC 9V adapter.
* RS232/USB PC COMPUTE#1
* Heavy duty & compact housing case.

SPECIFICATIONS

Circuit	Custom one-chip of microprocessor LSI circuit.																		
Display	LCD size : 50 mm x 30 mm LCD with green backlight (ON/OFF).																		
Measurement Type	SPL : Sound pressure level Dose : test noise exposure																		
Measurement Range	SPL : Auto 30 - 130 dB. Dose : 70~130dB																		
Resolution	0.1 dB.																		
Function	dB (A & C frequency weighting), Time weighting (Fast, Slow), Data hold Record (Max., Min.).																		
Accuracy (23 ± 5 °C)	Characteristics of " A " frequency weighting network meet IEC 61672 class 2. Under 94 dB input signal, the accuracy are : <table border="1" style="margin-left: 20px;"> <tr><td>31.5 Hz</td><td>± 3.5 dB</td></tr> <tr><td>63 Hz</td><td>± 2.5 dB</td></tr> <tr><td>125 Hz</td><td>± 2.0 dB</td></tr> <tr><td>250 Hz</td><td>± 1.9 dB</td></tr> <tr><td>500 Hz</td><td>± 1.9 dB</td></tr> <tr><td>1 K Hz</td><td>± 1.4 dB</td></tr> <tr><td>2 K Hz</td><td>± 2.6 dB</td></tr> <tr><td>4 K Hz</td><td>± 3.6 dB</td></tr> <tr><td>8 K Hz</td><td>± 5.6 dB</td></tr> </table> Remark : The above spec. are tested under the environment RF Field Strength less than 3 V/M & frequency less than 30 MHz only.	31.5 Hz	± 3.5 dB	63 Hz	± 2.5 dB	125 Hz	± 2.0 dB	250 Hz	± 1.9 dB	500 Hz	± 1.9 dB	1 K Hz	± 1.4 dB	2 K Hz	± 2.6 dB	4 K Hz	± 3.6 dB	8 K Hz	± 5.6 dB
31.5 Hz	± 3.5 dB																		
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1 K Hz	± 1.4 dB																		
2 K Hz	± 2.6 dB																		
4 K Hz	± 3.6 dB																		
8 K Hz	± 5.6 dB																		
Frequency Weighting Network	Characteristics of A & C. <i>A weighting :</i> The characteristic is simulated as "Human Ear Listing" response. Typical, if making the environmental sound level measurement, always select to A weighting. <i>C weighting</i> The characteristic is near the "FLAT" response. Typical, it is suitable for checking the noise of machinery (Q.C. check) & knowing the sound pressure level of the tested equipment.																		

Time weighting (FAST & SLOW)	Fast - t = 125 ms * "Fast" range is simulated the human ear response time weighting. Slow - t = 1 s * "Slow" range is easy to get the average values of vibration sound level.
Data hold	To freeze the measurement value.
Function selector SPL DOSE	Auto range : 30~130dB. Threshold Level (Thr) : 70~90dB in 1dB steps. Criterion Level(Crit) : 80 · 84 · 85 · 90dB. Exchange Rat : 3, 4, 5 or 6 dB
Frequency	31.5 to 8,000 Hz.
Microphone type	Electric condenser microphone.
Microphone size	Out size, 12.7 mm DIA. (1/2 inch).
Calibration VR	Build in external calibration VR, easy to calibrate on 94 dB level by screw driver. * Calibrated via external SOUND CALIBRATOR (SC-942, optional).
Calibrator	B & K (Briel & kjaer), MULTIFUNCTION ACOUSTIC CALIBRATOR Type 4226.
Datalogger Sampling Time Setting range	Auto 1 second to 3600 seconds @ Sampling time can set to 1 second, but memory data may loss. Manual Push the data logger button once will save data one time. @ Set the sampling time to 0 second.
Memory device	internal memory device : EEPROM can be record 16,000 items. external memory device (AC Adapter only) : SD memory card. 1 GB to 16 GB.
Data error no.	≤ 0.1% no. of total saved data typically.
Advanced setting	* Set clock time (Year / Month / Date,Hour / Minute / Second) * Set sampling time * Auto power OFF management * Set beep Sound ON/OFF * Decimal point of SD card setting * SD memory card Format * Frequency weighting to A or C setting
Over Indication	Show " - - - - ".
Data Hold	Freeze the display reading.
Memory Recall	Maximum & Minimum value.
Sampling Time of Display	Approx. 1 second.
Data Output	RS 232/USB PC computer interface. * Connect the optional RS232 cable UPCB-02 will get the RS232 plug. * Connect the optional USB cable USB-01 will get the USB plug.
Power off	Auto shut off saves battery life or manual off by push button.
Operating Temperature	0 to 50 °C.
Operating Humidity	Less than 85% R.H.
Power Supply	* Alkaline or heavy duty DC 1.5 V battery (UM4, AAA) x 6 PCs, or equivalent. * DC 9V adapter input. (AC/DC power adapter is optional).
Power Current	Normal operation (w/o SD card save data and LCD Backlight is OFF) : Approx. DC 16 mA. When " SD " save the data but and LCD Backlight is OFF) : Approx. DC 35 mA. * .If LCD backlight on, the power consumption will increase approx. DC 8 mA.
Weight	250 g/ 0.55 LB. (without battery)
Dimension	132 x 80 x 32 mm. (5.2 x 3.1 x 1.3 inch).
Accessories Included	* Instruction manual.....1 PC * Soft carrying case, CA-05A.....1 PC * Microphone with clip.....1 PC * Hanging unit (with sticker).....1 PC
Optional Accessories	* Sound calibrator (94 dB), SC-941. * Sound calibrator (94/114 dB), SC-942. * Sound wind shield ball, SB-01 * SD Card (4 GB) * USB cable, USB-01. * RS232 cable, UPCB-02. * Data Acquisition software, SW-E2005. * AC to DC 9V adapter.

* Appearance and specifications listed in this brochure are subject to change without notice.

IEC 61672, type 2

SOUND LEVEL METER

Model : SL-4011

ISO-9001, CE, IEC1010



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DIGITAL SOUND LEVEL METER

Model : SL-4011

FEATURES

* Large LCD display, easy to read.	* Max. Hold function for stored the maximum value on display.
* Frequency weighting networks are designed to meet the IEC 61672 type 2.	* Warning indicator for over and under load.
* A & C weighting networks are conformity to standards.	* LCD display for low power consumption & clear read-out even in bright ambient light condition.
* Time weighting(FAST & SLOW) dynamic characteristic modes.	* Used the durable, long-lasting components, including a strong, light weight ABS-plastic housing case.
* AC/DC output for system expansion.	* Small and light weight design allow one hand operation.
* Build in adj. VR is available for easy calibration.	* Low battery indicator.
* Condenser microphone for high accuracy & long-term stability.	

SPECIFICATIONS

Display	18mm (0.7") LCD (Liquid Crystal Display), 3 1/2 digits.
Function	dB (A & C frequency weighting), Time weighting(Fast, Slow), Max. hold, AC & DC output.
Measurement Range	3 ranges, 30 to 130 dB, input signal only.
Resolution	0.1 dB.
Accuracy (23 ± 5 °C)	Frequency weighting meet IEC 61672 type 2, calibrating input signal on 94 dB(31.5 Hz to 8 kHz), then the accuracy of A weighting is specified as following: 31.5 Hz - ± 3 dB, 63 Hz - ± 2 dB, 125 Hz - ± 1.5 dB 250 Hz - ± 1.5 dB, 500 Hz - ± 1.5 dB, 1 kHz - ± 1.5 dB 2 kHz - ± 2 dB, 4 kHz - ± 3 dB, 8 kHz - ± 5 dB
Frequency Weighting Network	Characteristics of A & C.
	A weighting - The characteristic is simulated as "Human Ear Listing" response. Typical, if making the environmental sound level measurement, always select to A weighting. C weighting - The characteristic is near the "FLAT" response. Typical, it is suitable for checking the noise of machinery (Q.C. check) & knowing the sound pressure level of the tested equipment.
Frequency	31.5 Hz to 8,000 Hz.
Calibrator	B & K (Bruel & kjaer), multi-fuction acoustic calibrator, model : 4226.
Microphone	Electric condenser microphone.
Size of microphone	1/2 inch standard size.
Range selector	30 to 80 dB, 50 to 100 dB, 80 to 130 dB, 50 dB on each step, with over & under range indicating.
Time weighting (Fast & Slow)	Fast - t = 200 ms, Slow - t = 500 ms, * "Fast" range is simulated the human ear response time weighting. "Slow" range is easy to get the average values of vibration sound level.
Calibration	* Build in external calibration VR, easy to calibrate by external screw driver. * Internal oscillation system, 1 KHz sine wave generator.
Output Signal	AC output - AC 0.5 Vrms corresponding to each range step. DC output - DC 0.3 to 1.3 VDC, 10 mV per dB. Out put impedance - 600 ohm.
Out terminal	3.5 phone output terminal is provided for connection with analyzer, level recorder, tape recorder.
Operating Temp.	0 °C to 50 °C (32 °F to 122 °F).
Operating Humidity	Less than 80% RH
Power Supply	006P DC 9V battery(heavy duty type).
Power Consumption	Approx. DC 6mA.
Dimension	255 x 70 x 28 mm (10.0x2.8x1.1 inch).
Weight	280 g/0.62 LB (including battery).
Standard Accessories	Instruction Manual 1 PC.
Optional Accessories	94 dB Sound Calibrator, Model : SC-941.
	94 dB/114 dB Sound Calibrator, Model : SC-942. Hard carrying case, Model : CA-06.

Auto range, AC output, Memory

SOUND LEVEL METER

Model : SL-4012

ISO-9001, CE, IEC1010



FEATURES

- * Large LCD display, easy to read.
- * Frequency weighting meet IEC 61672 class 2.
- * Auto range & manual range.
- * A & C frequency weighting.
- * Fast & Slow time weighting
- * AC output for system expansion.
- * RS232 computer interface.
- * External calibration VR.
- * Hold & Memory record.
- * High accuracy condenser microphone
- * Peak Hold.
- * Over and under load indicator.
- * LCD display.
- * Durable, strong light weight ABS-plastic housing case.



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LUTRON ELECTRONIC

The Art of Measurement

Auto range, AC output, Memory

DIGITAL SOUND LEVEL METER

Model : SL-4012

FEATURES	
* Large LCD display, easy to read.	* Hold & Memory record (max., min.)
* Frequency weighting networks are designed to meet IEC 61672 class 2.	* Condenser microphone for high accuracy & stability.
* Auto range & manual range.	* Peak Hold function for stored the maximum value.
* A & C weighting networks are conformity to standards.	* Warning indicator for over and under load.
* Fast & Slow dynamic characteristic modes.	* LCD display for low power consumption & clear read-out even in bright ambient light condition.
* AC output for system expansion.	* Used the durable, long-lasting components, including a strong light weight ABS-plastic housing case.
* RS232/USB computer interface.	* Compact and light weight plastic housing.
* Build in adj. VR is available for easy calibration.	

SPECIFICATIONS	
Display	52 mm x 32 mm LCD (Liquid Crystal Display), 5 digits.
Function	dB (A & C frequency weighting), Time weighting(Fast, Slow), Hold, Memory (max. & min.), Peak hold, AC & RS232 output.
Measurement Range	30 - 130 dB.
Resolution	0.1 dB.
Accuracy (23 ± 5 °C)	Frequency weighting meet IEC 61672 class 2, calibrating input signal on 94 dB(31.5 Hz to 8 kHz), then the accuracy of frequency weighting is specified as following: 31.5 Hz - ± 3.5 dB, 63 Hz - ± 2.5 dB, 125 Hz - ± 2.0 dB 250 Hz - ± 1.9 dB, 500 Hz - ± 1.9 dB, 1 kHz - ± 1.4 dB 2 kHz - ± 2.6 dB, 4 kHz - ± 3.6 dB, 8 kHz - ± 5.6 dB
Frequency Weighting Network	Characteristics of A & C. A weighting - The characteristic is simulated as "Human Ear Listing" response. Typical, if making the environmental sound level measurement, always select to A weighting. C weighting - The characteristic is near the "FLAT" response. Typical, it is suitable for checking the noise of machinery (Q.C. check) & knowing the sound pressure level of the tested equipment.
Frequency	31.5 Hz to 8,000 Hz.
Calibrator	B & K (Bruel & kjaer), multi-fuction acoustic calibrator, model : 4226.
Microphone type	Electric condenser microphone.
Size of microphone	1/2 inch standard size.
Range selector	Auto range : 30 to 130 dB. Manual range : 3 range, 30 to 80 dB, 50 to 100 dB, 80 to 130 dB, 50 dB on each step, with over & under range indicating.
Time Weighting (Fast & Slow)	Fast - t = 200 ms, Slow - t = 500 ms, * "Fast" range is simulated the human ear response time weighting. "Slow" range is easy to get the average values of vibration sound level. * The "Fast" & "Slow" time weighting range are designed to IEC 61672 class 2 requirement.
Output Signal	* AC output - AC 0.5 Vrms corresponding to each range step. Output impedance - 600 ohm. * RS232 output.
Output terminal	Terminal 1 : RS232 computer interface terminal. Terminal 2 : AC output terminal. * Terminal socket size : 3.5 mm dia. phone socket.
Calibration VR	Build in external calibration VR, easy to calibrate on 94 dB level by screw driver.
Operating Temp.	0 °C to 50 °C (32°F to 122°F).
Operating Humidity	Less than 80% RH.
Power Supply	006P DC 9V battery (Alkaline or heavy duty type).
Power Consumption	Approx. DC 6mA.
Dimension	268 x 68 x 29 mm (10.6 x 2.7 x 1.1 inch).
Weight	295 g/0.65 LB.
Standard Accessories	Instruction Manual 1 PC.
Optional	Sound Calibrator, model : SC-941 (94 dB). SC-942 (94dB, 114 dB). Carrying case : CA-06 RS232 cable, Model : UPCB-02 USB cable, Model : USB-01 Application software, Model : SW-U801-WIN

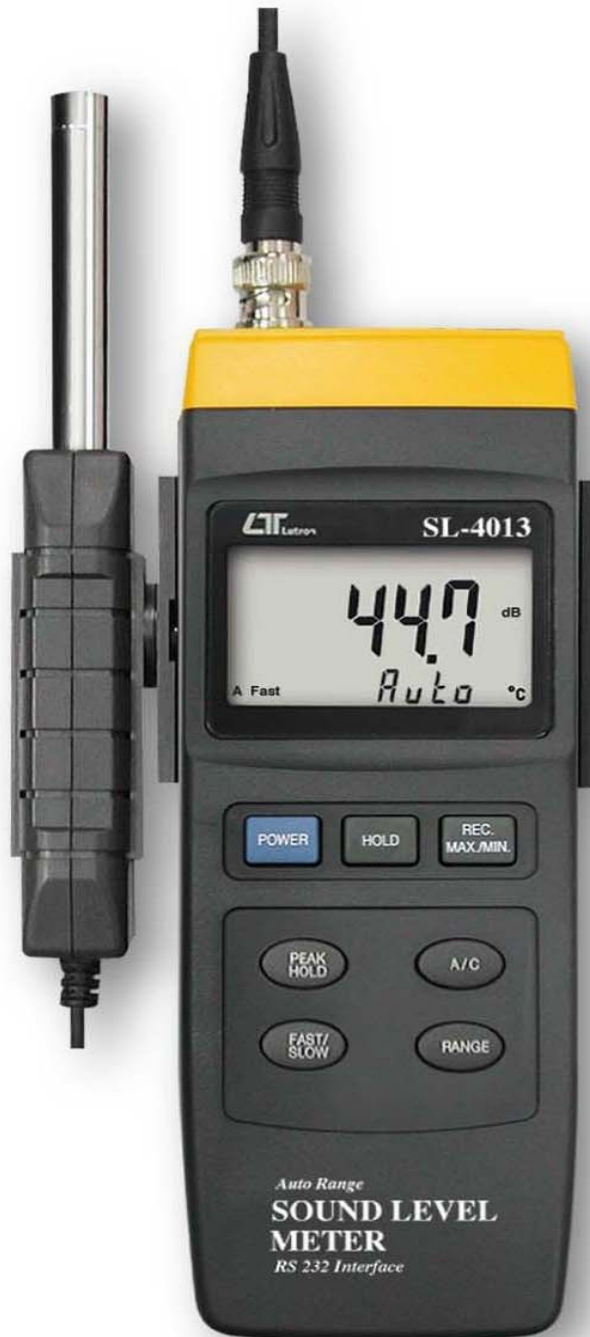
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Auto range, Separate probe, AC output, Memory

SOUND LEVEL METER

Model : SL-4013

ISO-9001, CE, IEC1010



FEATURES

- * Separate sound probe, easy operation.
- * Large LCD display, easy to read.
- * Frequency weighting meet IEC 61672 class 2.
- * Auto range & manual range.
- * A & C frequency weighting.
- * Fast & Slow time weighting
- * AC output for system expansion.
- * RS232 computer interface.
- * External calibration VR.
- * Hold & Memory record.
- * High accuracy condenser microphone
- * Peak Hold.
- * Over and under load indicator.
- * LCD display.
- * Durable, strong light weight ABS-plastic housing case.



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Auto range, Separate probe, AC output, Memory

DIGITAL SOUND LEVEL METER, Model : SL-4013

FEATURES	
* Large LCD display, easy to read.	* Build in adj. VR is available for easy calibration.
* Frequency weighting networks are designed to meet IEC 61672 class 2.	* Hold & Memory record (max., min.)
* Auto range & manual range.	* Condenser microphone for high accuracy & stability.
* A & C weighting networks are conformity to standards.	* Peak Hold function for stored the maximum value.
* Fast & Slow dynamic characteristic modes.	* Warning indicator for over and under load.
* AC output for system expansion.	* LCD display for low power consumption & clear read-out even in bright ambient light condition.
* RS232/USB computer interface.	* Used the durable, long-lasting components, including a strong light weight ABS-plastic housing case.
* Separate sound probe, easy for remote sound measurement.	* Compact and light weight plastic housing.

SPECIFICATIONS	
Display	52 mm x 32 mm LCD (Liquid Crystal Display), 5 digits.
Function	dB (A & C frequency weighting), Time weighting(Fast, Slow), Hold, Memory (max. & min.), Peak hold, AC & RS232 output.
Measurement Range	30 - 130 dB.
Resolution	0.1 dB.
Accuracy (23 ± 5 °C)	Frequency weighting meet IEC 61672 class 2, calibrating input signal on 94 dB (31.5 Hz to 8 KHz), then the accuracy of frequency weighting is specified as following: 31.5 Hz - ± 3 dB, 63 Hz - ± 2.5 dB, 125 Hz - ± 2.0 dB 250 Hz - ± 1.9 dB, 500 Hz - ± 1.9 dB, 1 kHz - ± 1.4 dB 2 kHz - ± 2.6 dB, 4 kHz - ± 3.6 dB, 8 kHz - ± 5.6 dB
Frequency Weighting Network	Characteristics of A & C. A weighting - The characteristic is simulated as "Human Ear Listing" response. Typical, if making the environmental sound level measurement, always select to A weighting. C weighting - The characteristic is near the "FLAT" response. Typical, it is suitable for checking the noise of machinery (Q.C. check) & knowing the sound pressure level of the tested equipment.
Frequency	31.5 Hz to 8,000 Hz.
Calibrator	B & K (Bruel & kjaer), multi-fuction acoustic calibrator, model : 4226.
Microphone	Electric condenser microphone.
Size of microphone	1/2 inch standard size.
Range selector	Auto range : 30 to 130 dB. Manual range : 3 range, 30 to 80 dB, 50 to 100 dB, 80 to 130 dB, 50 dB on each step, with over & under range indicating.
Time Weighting (Fast & Slow)	Fast - t = 200 ms, Slow - t = 500 ms, * "Fast" range is simulated the human ear response time weighting. "Slow" range is easy to get the average values of vibration sound level. * The "Fast" & "Slow" time weighting range are designed to IEC 61672 class 2 requirement.
Output Signal	* AC output - AC 0.5 Vrms corresponding to each range step. Output impedance - 600 ohm. * RS232 output.
Output terminal	Terminal 1 : RS232 computer interface terminal. Terminal 2 : AC output terminal. * Terminal socket size : 3.5 mm dia. phone socket.
Calibration VR	Build in external calibration VR, easy to calibrate on 94 dB level by screw driver.
Operating Temp.	0 °C to 50 °C (32°F to 122°F).
Operating Humidity	Less than 80% RH.
Power Supply	006P DC 9V battery (Alkaline or heavy duty type).
Power Consumption	Approx. DC 6mA.
Dimension	<i>Main instrument</i> 205 x 68 x 29 mm (8.07x2.7x1.1 inch). <i>Sound probe</i> 170.5 x 24.5 x 19 mm (6.7x1.0x0.7 inch).
Weight	405 g/0.89 LB (including probe).
Standard Accessories	Instruction manual 1 PC. Separate sound probe..... 1 PC. Probe holder..... 1 PC.
Optional	Sound Calibrator, model : SC-941 (94 dB). SC-942 (94dB, 114 dB). Carrying case : CA-06 RS232 cable, Model : UPCB-02 USB cable, Model : USB-01 Application software, Model : SW-U801-WIN

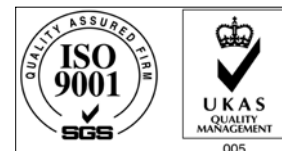
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Frequency and time weighting meet IEC 61672, Class 1

SOUND LEVEL METER

Model : SL-4022

ISO-9001, CE, IEC1010



LUTRON ELECTRONIC

The Art of Measurement

DIGITAL SOUND LEVEL METER

Model : SL-4022

FEATURES	
* Frequency weighting and time weighting are meet IEC 61672 Class 1.	* Max. Hold function for stored the maximum value on display.
* Large LCD display, easy to read.	* Warning indicator for over and under load.
* A & C weighting networks are conformity to standards.	* LCD display for low power consumption & clear read-out even in bright ambient light condition.
* FAST & SLOW dynamic characteristic modes.	* Used the durable, long-lasting components, including a strong, light weight ABS-plastic housing case.
* AC output for system expansion.	* Compact and heavy duty housing case.
* Build in adj. VR, available for easy calibration.	* Low battery indicator.
* Condenser microphone for high accuracy & long-term stability.	
* Build max. hold reset switch.	

SPECIFICATIONS	
Display	1 8 mm (0.7") LCD (Liquid Crystal Display), 3 1/2 digits.
Function	dB (A & C frequency weighting), Time weighting (Fast, Slow), Max. hold, Max. hold reset, AC output.
Measurement Range	3 ranges (30 - 70 dB, 60 - 100 dB, 90 - 130 dB),
Resolution	0.1 dB.
Accuracy (23 ± 5 °C)	Frequency weighting meet IEC 61672 Class 1, calibrating input signal on 94 dB the accuracy of frequency weighting is specified as following: <i>31.5 Hz : ± 2.0 dB, 63 Hz : ± 1.5 dB, 125 Hz : ± 1.5 dB, 250 Hz : ± 1.4 dB, 500 Hz : ± 1.4 dB, 1 KHz : ± 1.1 dB, 2 KHz : ± 1.6 dB, 4 KHz : ± 1.6 dB, 8 KHz : + 2.1 dB to -3.1 dB,</i>
Frequency Weighting Network	Characteristics of A & C. A weighting - The characteristic is simulated as "Human Ear Listing" response. Typical, if making the environmental sound level measurement, always select to A weighting. C weighting - The characteristic is near the "FLAT" response. Typical, it is suitable for checking the noise of machinery (Q.C. check) & knowing the sound pressure level of the tested equipment.
Frequency	31.5 Hz to 16 KHz. * Accuracy is tested within 31.5 Hz to 8 KHz.
Calibrator	B & K (Bruel & kjaer), multi-fuction acoustic calibrator, model : 4226.
Microphone type	Electric condenser microphone.
Size of Microphone	1/2 inch standard size.
Range Selector	30 to 70 dB, 60 to 100 dB, 90 to 130 dB, 40 dB on each step, with over & under range indicating.
Time Weighting (F & S)	Fast - t = 200 ms, Slow - t = 500 ms, * "Fast" range is simulated the human ear response time weighting. "Slow" range is easy to get the average values of vibration sound level. * The "Fast" & "Slow" time weighting range are designed to IEC 61672 Class 1 requirement.
Output Signal	AC output - AC 750 mVrms corresponding to each range step.
Calibration	Build in external calibration VR, easy to calibrate on 94 dB level by screw driver. Internal oscillation system, 1 KHz sine wave generator.
Output Terminal	3.5 mm dia. phone output terminal is provided for connection with analyzer, level recorder, tape recorder.
Operating Temp.	0 °C to 50 °C (32 °F to 122 °F).
Operating Humidity	Less than 80% RH.
Power Supply	DC 9V battery x 2 PCs, 006P, MN1604 (PP3) or equivalent, heavy duty or alkaline type.
Power Consumption	Approx. DC 17 mA.
Dimension	260 x 87 x 36 mm (10.2 x 3.4 x 1.4 inch).
Weight	450 g/0.99 LB
Standard Accessories	Instruction Manual..... 1 PC. Calibration screw driver..... 1 PC. Carrying case..... 1 PC.
Optional Accessories	94 dB Sound Calibrator, model : SC-941. 94/114 dB Sound Calibrator, model : SC-942. Wind shield ball, model : SB-01.

SOUND LEVEL METER CALIBRATOR, Model : SC-941, SC-942

SPECIFICATIONS	
Futures	Precision 94 dB/1000 Hz sound calibrator, useful to calibrate Sound Level Meter.
Frequency	1000 Hz ± 2 %.
Sound Pressure Level	SC-941 94 dB : ± 0.75 dB. SC-942 94 dB : ± 0.75 dB, 114 dB : ± 0.9 dB.
Microphone Type	0.5" microphone & 1" microphone.
Size	Round 50 mm dia. x 145 mm.

SD Card, real time data logger, Patent

SOUND LEVEL METER

Model : SL-4023SD

ISO-9001, CE, IEC1010



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The Art of Measurement

SD Card real time data logger

SOUND LEVEL METER

Model : SL-4023SD

FEATURES

* Main functions are designed to meet IEC 61672 class 2.
* A & C weighting networks comply with standards.
* 0.5" standard microphone head.
* Time weighting (Fast & Slow) dynamic characteristic modes.
* Build External calibration VR.
* Auto range & Manual range selection.
* Available for external calibration adjustment.
* Condenser microphone for high accuracy & long-term stability.
* Memory function to store the Max. & Min. value.
* Hold and Peak Hold functions.
* Real time SD memory card Datalogger, it Built-in Clock and Calendar, real time data recorder, sampling time set from 1 second to 3600 seconds.
* Manual datalogger is available (set the sampling time to 0 second), during execute the manual datalogger function, it can set the different position (location) No. (position 1 to position 99).
* Innovation and easy operation, computer is not need to setup extra software, after execute datalogger, just take away the SD card from the meter and plug in the SD card into the computer, it can down load the all the measured value with the time information (year/month/date/hour/minute/second) to the Excel directly, then user can make the further data or graphic analysis by themselves.
* SD card capacity : 1 GB to 16 GB.
* LCD with green light backlight, easy reading.
* Can default auto power off or manual power off.
* Data hold, record max. and min. reading.
* Microcomputer circuit, high accuracy.
* Power by UM3/AA (1.5 V) x 6 batteries or DC 9V adapter.
* RS232/USB PC COMPUTER interface.
* Heavy duty & compact housing case.

GENERAL SPECIFICATIONS

Circuit	Custom one-chip of microprocessor LSI circuit.
Display	LCD size : 52 mm x 38 mm LCD with green backlight (ON/OFF).
Measurement Range	30 - 130 dB.
Resolution	0.1 dB.
Function	dB (A & C frequency weighting), Time weighting (Fast, Slow), Peak hold, Data hold Record (Max., Min.).
Accuracy (23 ± 5 °C)	Characteristics of " A " frequency weighting network meet IEC 61672 class 2. Under 94 dB input signal, the accuracy are : 31.5 Hz ± 3.5 dB 63 Hz ± 2.5 dB 125 Hz ± 2.0 dB 250 Hz ± 1.9 dB 500 Hz ± 1.9 dB 1 K Hz ± 1.4 dB 2 K Hz ± 2.6 dB 4 K Hz ± 3.6 dB 8 K Hz ± 5.6 dB <i>Remark :</i> <i>The above spec. are tested under the environment RF Field Strength less than 3 V/M & frequency less than 30 MHz only.</i>
Frequency Weighting Network	Characteristics of A & C. A weighting : The characteristic is simulated as "Human Ear Listing" response. Typical, if making the environmental sound level measurement, always select to A weighting. C weighting The characteristic is near the "FLAT" response. Typical, it is suitable for checking the noise of machinery (Q.C. check) & knowing the sound pressure level of the tested equipment.
Data hold	To freeze the measurement value.
Peak hold	To keep the peak (max.) measurement value.

Time weighting (Fast & Slow)	Fast - t = 200 ms * "Fast" range is simulated the human ear response time weighting. Slow - t = 500 ms * "Slow" range is easy to get the average values of vibration sound level.
Range selector	<i>Auto range :</i> 30 to 130 dB. <i>Manual range :</i> 3 range, 30 to 80 dB, 50 to 100 dB, 80 to 130 dB, 50 dB on each step, with over & under range indicating.
Frequency	31.5 to 8,000 Hz.
Microphone type	Electric condenser microphone.
Microphone size	Out size, 12.7 mm DIA. (1/2 inch).
Calibration VR	Build in external calibration VR, easy to calibrate on 94 dB level by screw driver. * Calibrated via external SOUND CALIBRATOR (SC-941, optional).
Calibrator	B & K (Brueel & kjaer), MULTIFUNCTION ACOUSTIC CALIBRATOR 4226.
Datalogger Sampling Time Setting range	Auto 1 second to 3600 seconds <i>@ Sampling time can set to 1 second, but memory data may loss.</i> Manual Push the data logger button once will save data one time. <i>@ Set the sampling time to 0 second.</i> <i>@ Manual mode, can also select the 1 to 99 position (Location) no.</i>
Memory Card	SD memory card. 1 GB to 16 GB.
Advanced setting	* Set clock time (Year/Month/Date, Hour/Minute/ Second) * Decimal point of SD card setting * Auto power OFF management * Set beep Sound ON/OFF * Set sampling time * SD memory card Format
Over Indication	Show " - - - - ".
Data Hold	Freeze the display reading.
Memory Recall	Maximum & Minimum value.
Sampling Time of Display	Approx. 1 second.
Data Output	RS 232/USB PC computer interface. * Connect the optional RS232 cable UPCB-02 will get the RS232 plug. * Connect the optional USB cable USB-01 will get the USB plug.
Power off	Auto shut off saves battery life or manual off by push button.
Operating Temperature	0 to 50 °C.
Operating Humidity	Less than 85% R.H.
Power Supply	* Alkaline or heavy duty DC 1.5 V battery (UM3, AA) x 6 PCs, or equivalent. * DC 9V adapter input. (AC/DC power adapter is optional).
Power Current	Normal operation (w/o SD card save data and LCD Backlight is OFF) : <i>Approx. DC 8.5 mA.</i> When SD card save the data but and LCD Backlight is OFF) : <i>Approx. DC 30 mA.</i> * If LCD backlight on, the power consumption will increase approx. 14 mA.
Weight	489 g/1.08 LB.
Dimension	245 x 68 x 45 mm. (9.6 x 2.7 x 1.9 inch).
Accessories Included	* Instruction manual.....1 PC
Optional Accessories	* Sound calibrator (94 dB), SC-941. * Sound calibrator (94/114 dB), SC-942. * Sound wind shield ball, SB-01 * SD Card (1 GB) * SD Card (2 GB) * USB cable, USB-01. * RS232 cable, UPCB-02. * Data Acquisition software, SW-U801-WIN. * AC to DC 9V adapter. * Soft carrying case, CA-05A. * Hard carrying case, CA-06.

PATENT	CHINA : ZL 2008 2 0189918.5 ZL 2008 2 0189917.0 Germany : Nr. 20 2008 016 337.4 JAPAN : 3151214	TAIWAN : M 358970 M 359043 U.S.A. : Pending
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* Appearance and specifications listed in this brochure are subject to change without notice.

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