

## CEL-320S Convertible Sound Level Meter

### Introduction

The CEL-320S is a new concept in hand held noise meters. In its standard configuration with the CEL-425 stalk microphone it can be used as a simple integrating sound level meter. By the addition of the CEL-6681 cable microphone the dual function instrument is converted into a fully functional noise dosimeter. As a sound level meter the CEL-320S measures and displays the instantaneous level, the minimum and maximum level and the time average level, sound exposure level and peak level.



*CEL-320S sound level meter*

### Applications

- ❑ Simple noise surveys
- ❑ Community noise surveys
- ❑ Motorcycle noise surveys
- ❑ Checking compliance with local noise ordinances
- ❑ Machinery noise surveys
- ❑ Fire alarm testing
- ❑ Site boundary measurements
- ❑ Noise nuisance surveys
- ❑ Motor racing noise
- ❑ Motor boat noise



*simple sound level meter display on CEL-320S instrument*

### Operation and use

The CEL-320S has two main operational modes. The first mode is the simple sound level meter mode where the results are calculated and shown on the clear custom-designed display. Use this mode for basic non-storage of measurements. The second mode uses the large built-in memory function that enables the CEL-320S to store the whole sound level meter result set for up to a maximum of 50 separate runs. All runs are tagged with the date and time.

In the second data-storage mode the CEL-320S stores all of the results taken in the simple sound level meter mode plus it can also collect up to 5 statistical noise exceedance levels, or LN% values. In addition, the instrument can measure the noise dose and project the 8 hour expected noise dose at the end of a shift after only a shorter representative measurement run. A Time Weighted average level, or TWA, is also calculated in this mode.

### Key Benefits

- ❑ Lightweight and very easy to use
- ❑ Large, clear custom display
- ❑ Intuitive operational method
- ❑ All the standard noise parameters measured
- ❑ Storage for up to 50 separate runs in non-volatile memory
- ❑ Runs tagged with date and time of start of recording
- ❑ Direct printout to standard office printers
- ❑ Download of noise data to computer to archive results
- ❑ Convertible to personal noise dosimeter if required

### Measured Parameters

Sound level meter mode

- ❑ Instantaneous sound level,  $L_p$
- ❑ Duration of run, hh:mm:ss
- ❑ Maximum sound level,  $L_{mx}$
- ❑ Minimum sound level,  $L_{mn}$
- ❑ Equivalent continuous noise level,  $L_{eq}$
- ❑ Sound exposure level,  $L_E$
- ❑ Time average level,  $L_{av}$
- ❑ Peak sound level,  $L_{pk}$

The CEL-320S has flexibility in the output too. Results stored in the memory can be directly printed or downloaded to a pc using the standard software program, dB10 that runs under the popular Windows operating systems. The software allows the CEL-320S to be customized to remove any unwanted parameters so that the meter only measures and stores the actual results that are required. For security, the user can lock in this setup and prevent tampering.

## Technical Specifications for CEL-320S Sound Level Meter

International standards		Parameters measured and stored	
Acoustic accuracy	ANSI S1.4-1983 Type (S)2 ANSI S1.43-1997 IEC 60651:1979 type 2I IEC 60804:1980 type 2	Displayed parameters	
		Sound level meter mode (SLM non storing)	Lp, Dur, Lmx, Lmn, Leq, LE, Lav, Lpk
		Noise dosimeter/data mode (DATA storing)	Lp, LAeq, LAE, Leql, Lav, Lmx, Lmn, 5 x LN%, actual noise dose%, 8 hr projected noise dose%, TWA (at both threshold levels), LEPd, duration of run, current date, time, run #, pause, run in progress, battery voltage, security level
Electro-magnetic	EN 50081-1:1992, EN 50081-2:1993, EN 50082-1:1992, EN 50082-2:1995		
Measurement ranges (for rms. levels)	High range 70 – 140 dB Med range 50 – 120 dB Low range 30 – 100 dB		
Peak ranges	Top 40 db of each range		
<b>Measurements stored</b>			
Separate runs (events)	Maximum 50	<b>Physical characteristics</b>	
Factory setups for data storage modes	7 - OSHA, MSHA, DoD, ACGIH, ISO85, ISO90, METER	Battery pack	1 9V radio battery Duracell MN 1604
		Battery life	50 hours (approx.)
User setups	13 – programmed from pc	Size	4.8 x 2.6 x 1.2 in, 120 x 65 x 30 mm
Threshold levels (dB)	2 (from 70 to 90 dB)	Weight	11 oz, 300 gm
Criterion level (dB)	1 (from 80 to 90 dB)		
Frequency weightings	A, C for rms. C, Lin for peak	Microphone assembly	Electret ¼ in stalk 3.1 in
Time weightings	Slow, Fast, Impulse, peak	Optional convertible noise dosimeter microphone assembly	Rugged Electret ¼ in microphone on 32 in cable with locking plug, field replaceable item
Exchange rates	3, 4, 5, 6 dB doubling		

### Ordering Information

CEL-320S	Single CEL-320S sound level meter with CEL-425 stalk microphone assembly (includes CEL-6702 dB10 Windows software and C6671 RS232 cable)
CEL-110/2	ANSI Class 2 acoustic calibrator and CEL-4627 ¼ in to ½ in microphone adaptor
CEL-6702	dB10 version 2.x control and download software for Windows (32 bit program)
C6671	RS232 interface cable from dosimeter to pc
CEL-6225	Small foam windscreen for use outdoors or in strong air flows
CEL-6682	Single instrument kit case with space for standard items
CEL-320S/K1	Single sound level meter complete instrument kit with all above items in carrying case
CEL-320XS/K1	Single sound level meter complete instrument kit (less software and download cable)
CEL-6679	Multiple instrument kit case for up to 10 sound level meters/dosimeters and access.
CEL-6648	Nylon belt pouch to protect instrument in dirty or oily environments
CEL-6681	Optional cable microphone assembly to convert hand-held CEL-320S sound level meter to standard CEL-320 personal noise dosimeter
CEL-320XS	Standard CEL-320S sound level meter less cable and download software

### Standard Multiple Instrument Kits

CEL-320/K5	5 pack kit inc. 5 CEL-320XS, 1 CEL-110/2, 1 C6671, 1 dB10, 5 CEL-6225, 1 CEL-6679
CEL-320/K10	10 pack kit inc. 10 CEL-320XS, 1 CEL-110/2, 1 C6671, 1 dB10, 10 CEL-6225, 1 CEL-6679