

Environmental and community noise measurements

Environmental noise measurements are often required as a part of new development planning and assessing the potential environmental impact, such as with the siting of wind turbines, but is also done to check noise levels against local noise ordinances or to investigate noise nuisance complaints in the community.

Code Enforcement and Nuisance Complaints

Many cities and towns have municipal codes or other legislation that spell out limits for noise produced by industrial sites or other human activity such loud music, 'boom cars', vehicles with inadequate mufflers, sporting events, music performances and night clubs, as well as noisy activity at a residence. The specific noise limits may vary greatly from jurisdiction to jurisdiction, with various requirements and measurement methods for determining whether a noise is considered to be 'too loud'. Often, a simple single average or maximum decibel level may be used to determine if the offending noise is beyond the limit of acceptability. Basic sound level meters such as the **CEL-240** or **CEL-244** can be used for this level of compliance testing. Different noise limits may apply at certain times of the day and night to account for greater sensitivity to noise in the night-time and resulting potential for sleep disturbance, and specific frequencies or highly 'tonal' can also be disturbing to sensitive individuals. For more advanced measurements including special calculations of the 'Day-night' (Ldn) or Day-evening-night' (Lden) levels, or for specific octave / third-octave frequency spectra capture, or for long term measurement, the **CEL-600** series is the way to go.

Highway Noise

For planning purposes such as new road construction or expansion, there are Federal Highway Administration regulations that apply. The FHWA developed noise regulations as required by the Federal-Aid Highway Act of 1970 (Public Law 91-605, 84 Stat. 1713). The regulation, 23 CFR 772 Procedures for Abatement of Highway Traffic Noise and Construction Noise, applies to highway construction projects where a State department of transportation has requested Federal funding. The regulation requires the highway agency to investigate traffic noise impacts in areas adjacent to federally-aided highways for proposed construction of a highway on a new location or the reconstruction of an existing highway to either significantly change the horizontal or vertical alignment or increase the number of through-traffic lanes. If the highway agency identifies impacts, it must consider abatement. The highway agency must incorporate all feasible and reasonable noise abatement into the project design.

Long term environmental monitoring

Many measurement protocols require that readings are taken over an extended period of time that can be as short as a few hours or as long as a whole week or even a month. Instruments used for these 'time history' recordings must be able to store multiple noise metrics in consistent time segments called "intervals". An overall noise reading, or "cumulative" value, for the entire measurement run allows results to be compared against any regulatory or other compliance limits that apply to the noise source. Specifically triggered and captured 'event based' data collected from

any significant noise disturbance helps by establishing exactly when the event occurred – and with the latest digital sampling and storage technology, an audio recording of the noise itself can be recorded for identification evidence and archival purposes. Again, for advanced measurements including large amounts of detailed time-history data, specialized metrics, audio signal recording and long-term unattended monitoring, the **CEL-63x** combines the power you need with the ease-of use you want.