

Applications for CEL Noise Instruments

Introduction

The primary applications for the range of acoustic measurement instruments manufactured by Casella CEL are for regulation driven areas. These include the Health and Safety at Work, Environmental Nuisance, and Product Development areas. Legislation exists in virtually all developed industrialized countries to limit the harmful effect of high noise levels in the workplace. More and more people are demanding that their home environment is free from the nuisance of intrusive noise from outside sources. When people purchase new items to bring into their home they require that it does not contribute to the general deterioration of their living space. All these situations require some form of objective measurement of potential noise problems to ensure that limits are not exceeded.

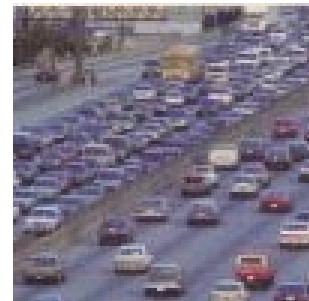
Workplace noise

It has long been established that exposure to excessively high noise levels for extended periods of time at work can cause loss of hearing acuity in later years. This loss of hearing is in addition to that suffered because of the normal aging process and occurs when very high noise exists all the time day-in and day-out.. Measurement of workplace noise typically involves the assessment of the notional average noise level over a full working day taking into account all of the likely contributing factors and sources. Personal noise dosimeters are very useful for measurements on individual workers since they follow a worker and accumulate all the exposure received during the workday. Comparisons with national limits allow an employer to verify the likelihood of an individual becoming deaf due to high noise levels. Hand held sound level meters can be used for measurements of specific machines or processes that are considered to be too noisy to provide additional information for noise control techniques.



Environmental nuisance

As countries become more developed the citizens demand a reduction in exposure to noise levels at home or in their day-to-day life. These can arise from transportation sources, fixed noise sources, commercial sources, etc. legislation exists to guide the environmental technician on what is reasonable and what is considered to be a nuisance. The time of day, place and local expectations all play a part in the simple measurements that may be needed to prove or otherwise that a hum in the background can be classed as a nuisance. Frequency based information in the form of octave or third octave band levels is virtually mandatory to resolve the subjective opinions of the parties involved.



Product development

In the desire to limit our exposure to unwanted noise in our cars, homes, gardens and other places where we gather to enjoy ourselves we want to be able to choose products to bring into these environments based on their noise output. This is often a difficult thing to quantify unless objective measurements can validate that a new household appliance is quieter than a competitive product. Frequency information will always be required for these types of measurements at least in third octave bands and possible in narrow bands to isolate and identify annoying tones that must be reduced to acceptable limits. International standards exist for many noise sources and products may not be allowed to be sold in certain markets if they are too noisy.

