

The *Dual SPL Traffic Light* is here!

The modern measurement method, enabling sound level monitoring, for
a very reasonable cost!

Dual SPL Traffic Light gives you a **Green Light**

As an organizer of events, do you monitor audio sound levels and really know that they do not play too loud in discotheques, concerts, theaters and other events?

The organizer has the legal responsibility, making sure that attendees are not exposed to too high sound levels

How do you measure sound levels correctly?

Since a professional sound level meter with a Type approved microphone costs a lot of money and an acoustician costs even more, sound levels will rarely be measured in the manner is stated in the Swedish documents and many country laws require.

At the concert, it is common practice that the sound engineer measures the sound levels at the mixing console with a "low cost device," which is really wrong. Both the "location" and "accuracy" is wrong.

In order to perform a "professional" measurement that is correct, a type approved measuring microphone plus software, enabling correct measurements, must be used and placed properly.

QirraSound Technologies Europe AB has together with the company Studio Six Digital LLC, developed an app for the iPhone/iPad consisting a professional measurement system according to Swedish Directives for sound measurements in concerts – the ***Dual SPL Traffic Light***.

It consists of an iPhone, a professional external microphone with its own data collection (the phone's own microphone is useless) making sure measurements can be performed with approved accuracy.

With either the iOS device and microphone placed near the sound source, or with the iPad placed at the mixerboard and the microphone positioned where people can be located, closest to the speaker via an XLR cable, it becomes an accurate measurement complying with the rules. You can also place the iPhone with its microphone in the correct position and have it measure and send emails when an exceedance happens.

A complete system for managing sound levels costs only from about \$230 USD and includes a professional data collection unit with a type approved microphone compatible with iPhone/iPad (Lightning connector) and applicable and easy-to-use software. The XLR option is somewhat more, but still much cheaper than any other system. This system is a low cost insurance, enabling you to be sure that you stay within the legal limits and can do something about it if there is an exceedance. Hence, as an organizer, you can relax with the ***Dual SPL Traffic Light***!

Contact us for more information in regards to this new tool that can measure sound levels correctly.

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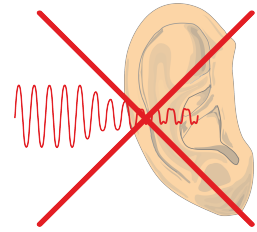
Qirra Sound

EXPERIENCE THE EXPERIENCE

Some more information:

iPad or iPhone is not included.

The Technical Research Institute in Sweden has written a document that describes how to measure sound levels in these applications¹. Our team has extensive international experience from sound measurements. Professor Arlinger has extended this work in a document "High Sound Levels from Music and its Impact on Adults and Children." Our system is following the IEC 61672-3 standard. *Dual SPL Traffic Light* and an iPhone will operate as follows:



The display on the iPhone becomes a traffic light (green, yellow, red) that will measure $L_{A,Fmax}$ and PEAK values simultaneously following the Swedish directives.

If the screen turns Red, it is too loud.

Green is good! Yellow is on the limit.

The *Dual SPL Traffic Light* sends an email to the organizer if the noise level exceeds one of the limit thresholds. As a result, you as organizer have a real proof that the concert or music complied with the laws and regulations that apply.

Dual SPL Traffic Light creates these opportunities!



The Swedish directive is as follows:

The maximum SPL should not exceed 100 dB $L_{A,Fmax}$. Actually, it is DOSE measurement that should be performed. When the dose has been consumed, the concert must stop! The L_{AeqT} level should not exceed 97 dB. A good estimate of the "DOSE" is to use both PEAK and a $L_{A,Fmax}$ combined. We call this the *Dual SPL Traffic Light* APP. The 115 dB peak level limit should be handled via a FAST measurement to detect transients in the sound. The peak detector should be used. The 115 dB values should be lowered if there are attendees below 13 years of age. This is important. In Sweden, the levels are lowered with 5 dB in this case. For those that work at the site, the exposure levels are 85 dBA $L_{eq, 8h}$. It is possible to increase the sound level 3 dB if one halves the exposure time. If the concert lasts for 2 hours, the levels cannot exceed 94 dB for those 2 hours. This includes the rehearsal time.

Since it is difficult to measure both sound levels ($L_{A,eq,T}$ and L_{peak}), they are typically measured one at a time, and rarely the latter (transients). That is wrong since transients can harm the hearing. An "error analysis" was performed in Sweden and their examples show that it is common with a measurement error of about 3 dB. Hence, it is appropriate to lower the limits 3 dB to be on the safe side.

**Hence, the final limits are: 97 dB $L_{A,Fmax}$ and 113 dB_{peak, fast}
Deduct 5 dB for youngsters.**

These limits used by the *Dual SPL Traffic Light* gives you a **Green Light!**

You can accomplish much more with our apps if you want to! RT60, FFT, RTA, SLM etc. can be measured professionally with an iPhone/iPad. More info at: www.studiosixdigital.com

¹ Measurement of high sound pressure levels - Measurement method for discos, concerts and other events with the public. Part 1: Operational overview.