When using a STEP-FUNKTION judgement of the slope is most important. The ideal would be if the slope rolls off in an e-funktion. The size of area below the slope indicates the low end. Short jumps of the slope show misalignments of the speaker. Dome tweeters i.e. have the ideal slope but even slopes of very good cone speakers are a little weak. These waves indicate coloration of response. The shown step of 30 W-100 has no wave of this kind.

Tone bursts are the best way to obtain an accurate picture of overall acoustic performance. Regrettably they are mostly used only to test rise-time and ringing - which shows much more clearly with a step funktional test! With a tone burst all the moving parts of a speaker can be loaded without burning the voice coil. With a given frequency the SPL should be 30dB higher at 1000 W input when compared with a 1 W input, if the output is linear. This test shows the driver's ability to reproduce the transients without compression. The right picture shows that even a 1000 W input is not the limit; the dynamic response is absolutely linear. Data given in catalogues (and even test reports) normally are calculated figures and not measured values.

This compression effect is either under-rated or ignored very often. That is why many speakers do not produce SPL's above 100 dB, in spite of higher theoretical specifications. However this test exposes such anomalies between calculations and actual measurements.