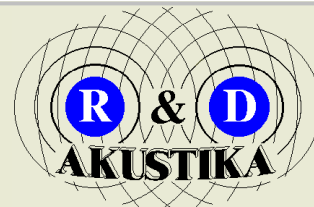


Limited liability company

* R&D AKUSTIKA *



LABORATORY MEASUREMENTS OF LOUDSPEAKER AND ACOUSTIC SYSTEM ELECTROACOUSTICAL PARAMETERS
STANDARDS: LVS EN 60268-5:2003 "Sound system equipment. Part 5: Loudspeakers"

IEC 60268-5 "High fidelity audio equipment and systems; Minimum performance requirements Part 5: Loudspeakers"

Measured parameters (abbreviations: SPKR –loudspeaker, AS – acoustic systems, c-curve-characteristics curve) :

p_m – average characteristic sound pressure at $U = \sqrt{R_{nom} \times 1W}$, distance $r = 1m$;

$SPL_{(1/3okt \Delta f)}$ – sound pressure level – 1/3 octave noise curve c-curves on work axis or angles – (α, β): (α - direction angle in horizontal plane, β -direction angle in vertical plane);

$L(p_m)$ – average characteristic sound pressure level – (the same also for $SPL_{1W/1m}$);

p_{nf} – $sin(f)$ sound pressure level c-curves for separate harmonics ($p_{2f}, p_{3f} \dots p_{nf}$) of the signal;

$SPL_{(\alpha, \beta)}$ – SPL – c-curves of directional angle towards work axis (so-called polar directional charts);

R_{dc} – SPKR coil directional current resistance – (the same also R_E);

$Z, |Z|(f)$ – frequency c-curves of input impedance complex values and module - $sin(f)$;

f_0, f_{ro} – SPKR resonance frequencies: 1) in enclosure AS, 2) free field – (identically: f_{ct}, f_s);

Q_t (Q_{ts}), Q_{es} and Q_{ms} – SPKR quality factors: 1) total, 2) defined with R_E and 3) mechanical;

U_n, U_{st}, U_{lt} un U_s – SPKR and AS 1) noise, 2) short-term, 3) long-term and 4) sin adjusted voltages.

Calculable parameters and parameters determined in the course of testing or evaluations:

P_{ch} – characteristic power (by which $p_m = 1 Pa$ or $SPL_{P_{ch} W/1m} = 94 dB$);

$(F_1 - F_2)$ – effective frequency range in tolerance field (Hi-Fi minimal requirements: 50 – 12500 Hz);

$\Delta SPL_{(1/3okt \Delta f)}$ – difference between SPL on work axis and $SPL_{|\alpha=20-30^\circ, \beta=0|}$ or $SPL_{|\alpha=0^\circ, \beta=5-10^\circ|}$;

$\Delta SPL_{(okt \Delta f)}$ – difference between SPL in 1 octave noise bands between stereophonical pair AS;

THD_{ch} – characteristic total harmonic distortion;

$|Z|_{min}$ – minimal value of input impedance module;

V_{As}, B, \dots – equivalent volume, electromechanical link factor, i.e. Thiele-Small parameters;

P_a ($1/3okt \Delta f$) – acoustic power – 1/3 octave noise band c-curve;

P_n, P_{st}, P_{lt} un P_s – SPKR and AS noise short term, long term and sin tested maximal power;

Di ($1/3okt \Delta f$) – directivity index – 1/3 octave noise band c-curves.



Measurements in anechoic chamber



Measurements in reverberation room



Maximal power testing room

Measurement result examples (given in measurement report)

