

APPLICATIONS

8" woofer for all kind of hi-fi-use: 2way (or up) systems transmission line bass reflex aperiodic damped or sealed enclosure

FEATURES

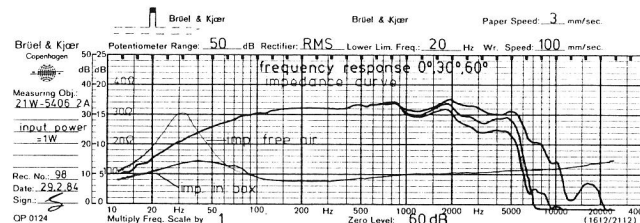
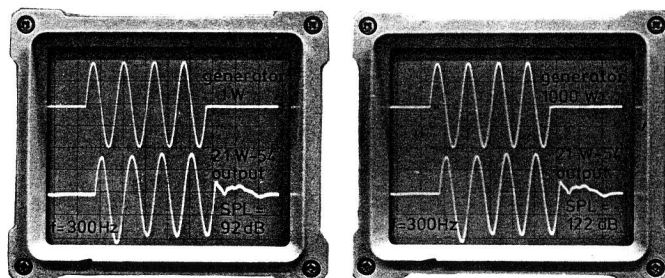
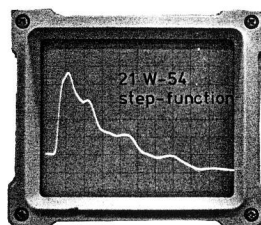
magnesium die cast basket
very high power handling
high BL-factor
rigid construction
tropic proof
vented long throw system
hexacoil technique
PHA cone material (phase homogeneous area)

With a STEP-FUNCTION datas about SPL and time scale are not important. A trained expert can compare stepfunctions made with even different scales. The cone steps up and creates a sound wave which meets a 1/4" B&K measuring mic. The slope shown on the screen shows the amount of air moved. So with woofers of same diameter the average of slope is the same. If now rise and slope is set in relation to each other two stepfunctions can be compared. The right picture shows that the 21 W-54 has a rise time ten times as fast as normal speakers of this size.

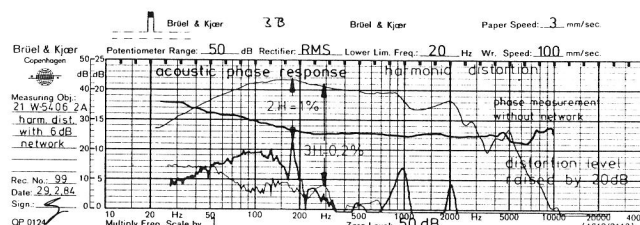
TONE BURSTS

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 function 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.

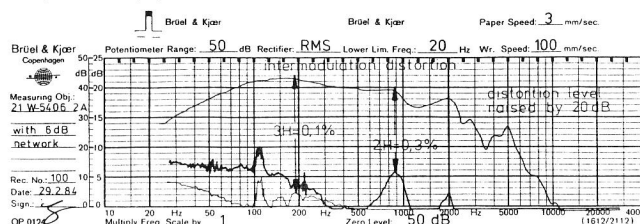
This compression effect is either under-rated or ignored very often. That is why many speakers do not produce SPL's above 100 dB, in spite of higher theoretical specifications. However this test exposes such anomalies between calculations and actual measurements.



Balanced response up to 4 kHz, important in 2way combinations. Early roll-off and high but narrow resonance impedance indicate high magnetic damping and energy.



The h. d. does not exceed 1% allover. The acoustic phase is linear up to 10 kHz (!) - no sharpness in 2way systems.



Compliance:		Overall dimensions:		222 x 83 mm	
suspension	C_{ms}	$0.886 \cdot 10^{-3} \text{ m/N}$	Power handling:		
acoustic	C_{as}	$0.429 \cdot 10^{-6} \text{ m}^3/\text{N}$	*nominal	DIN	160 W
equivalent volume	V_{as}	59.6 l	*music	DIN	220 W
Cone:			*transient	10 ms	1000 W
eff. cone area	S_d	220 cm ²	Q-factor:		
moving mass	M_{ms}	27 g	mechanical	Q_{ms}	2.03
lin. volume displacement	V_d	154 cm ³	electrical	Q_{es}	0.356
mech. resistance	R_{ms}	2.60 kg/s	total	Q_{ts}	0.303
lin. excursion P-P	X_{max}	7 mm	Resonance frequency free air:	f_s	30 Hz
max. excursion P-P		29 mm	Rise time		95 µs
*Frequency response:		35-5000 Hz	Sensitivity:	IW/lm	92 dB
Harmonic distortion:		< 1%	Voice coil:		
Intermodulation distortion:		< 1%	diameter	d	54 mm
Magnetsystem:			length	h	17 mm
total gap flux		1490 µ Wb	layers	n	2
flux density		0.91 Tesla	inductance (1 kHz)	L_e	0.25 mH
gap energy		849.4 mWs	nom. impedance	Z_{vc}	8 Ω
force factor	$B \times L$	9.09 Tm	min. impedance	Z_{min}	6.4 Ω
air gap volume	V_g	2.57 cm ³	DC resistance	R_e	5.6 Ω
air gap height		10 mm	Data given are as after 30 hours of running		
air gap width		1.55 mm	*Depends on cabinet construction		
Net weight:		2.5 kg			

* Thiele/Small parameters are measured not statically but dynamically.



Full automatic production lines spitting out big numbers of more or less one-way products with infernal speed have impressed most of the visitors of far eastern electronic factories.

Impressed said the production engineer of a high grade rationalised speaker factory when visiting the DYNAUDIO-plaht: "My god, you are making speakers like the swiss watch makers are making their world famous watches!"

