DYNAUDIO®

TECHNOLOGY UNLIMITED

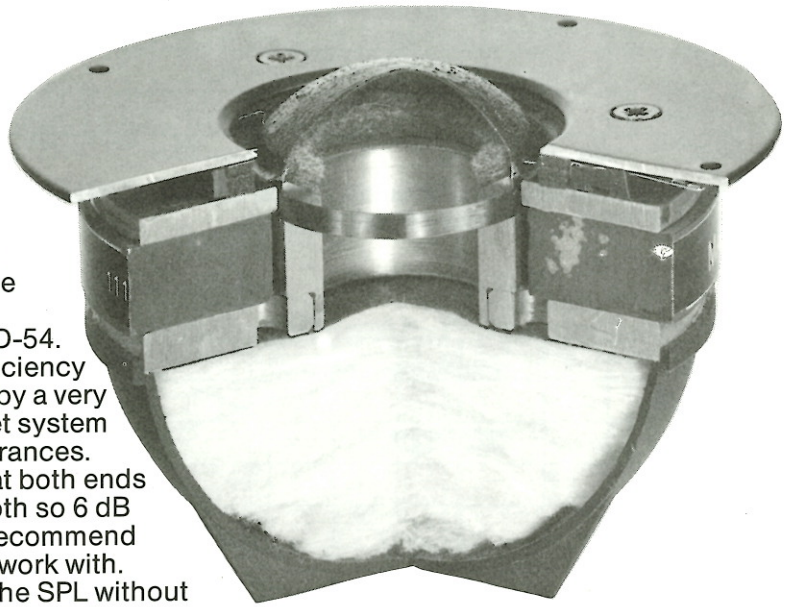
D-54 AF

APPLICATIONS

2" soft dome midrange
for high efficient
3-, 4- and 5-way
systems
mobile sound
hifi-PA
different face plates
for OEM

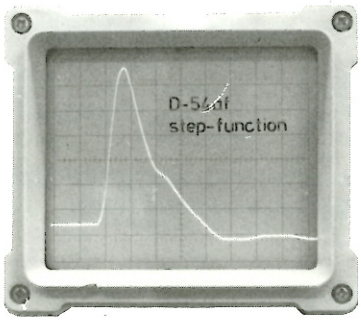
FEATURES

fabric diaphragm doped
soft roll-off
suspension
flexible copper cords
HEXACOIL technique
very high power hand-
ling
huge magnet system
MAGNAFLEX liquid
cooling
ideal phase
characteristic
wide dispersion
aperiodic damped double
chamber enclosure



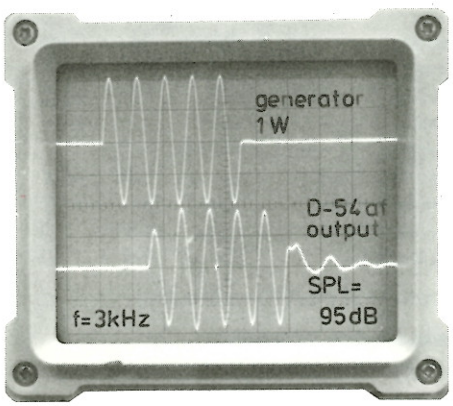
This is the flush mount version of the well known DYNAUDIO D-54. The high efficiency is achieved by a very large magnet system and low tolerances. The roll-off at both ends is very smooth so 6 dB slopes are recommend and easy to work with. The limit of the SPL without ringing and overshoots is beyond the limit of our test equipment with 127 dB. No compression can be observed. The venting of the magnetsystem is aerodynamically designed to avoid internal reflexions. The good dispersion, the excellent transient response and the ideal phase allow very good resolution and image characteristic.

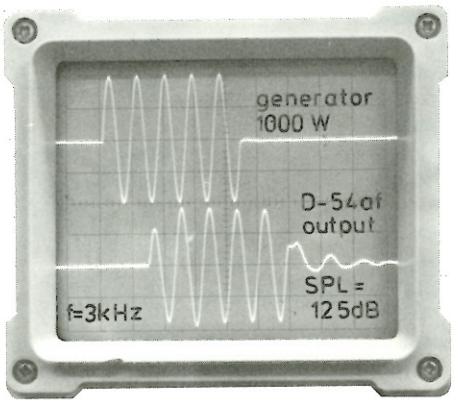
For the speaker pros the STEP FUNCTION is the most important measurement. The correct designed damping (double chamber, magnet size, magnaflex) leads to a first class step function curve: no ringing, not overshoot, no dangling.



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 funktion 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 linea 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.





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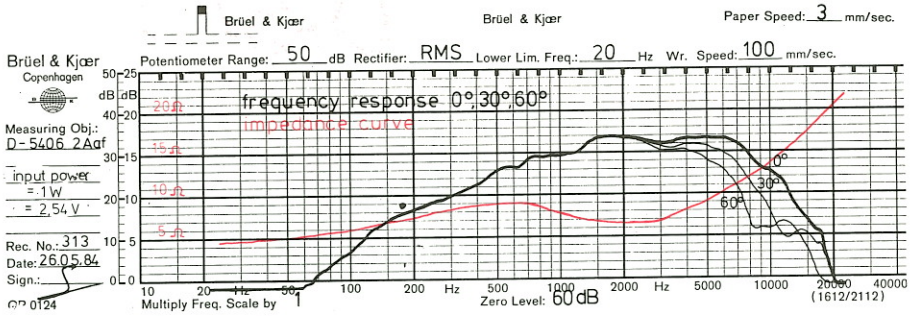
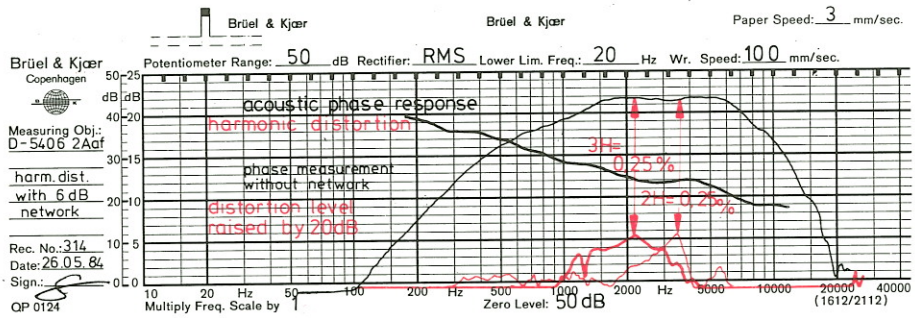
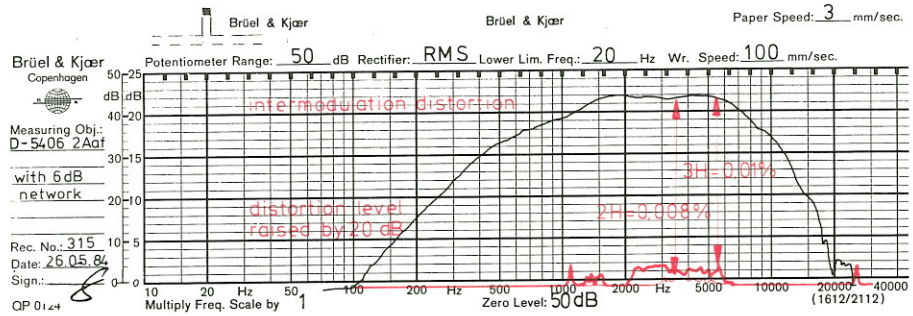


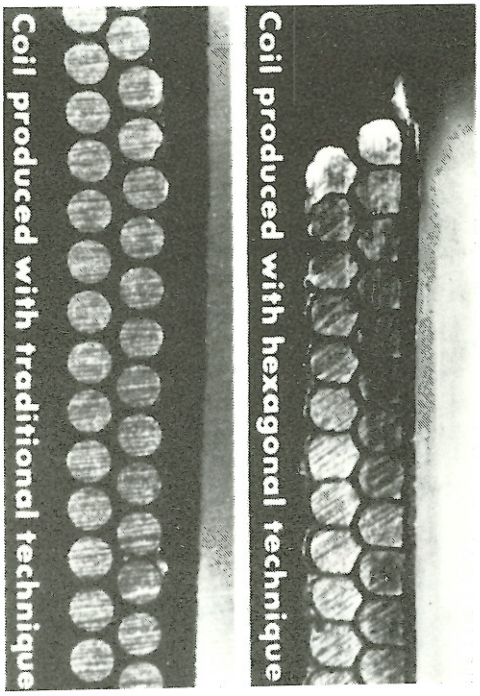
Significant flat impedance curve. Slope characteristics equal at 30° and 60° Easy filter design.



The acoustic phase proves the unproblematic handling of this midrange driver.



The sensitive spectrum of human voice requires distortionless response as shown here.



The cut of a HEXACOIL shows the honeycomb structure: high density of layers, intimate geared contact with the former which in return gives highgrade packing for less width of air gap, fast heat dissipation, rigidity and strength of the voice coil. The power handling is many times higher than that of a conventional coil. All DYNAUDIO voice coils are made in HEXACOIL technique. (U. S. pat.)

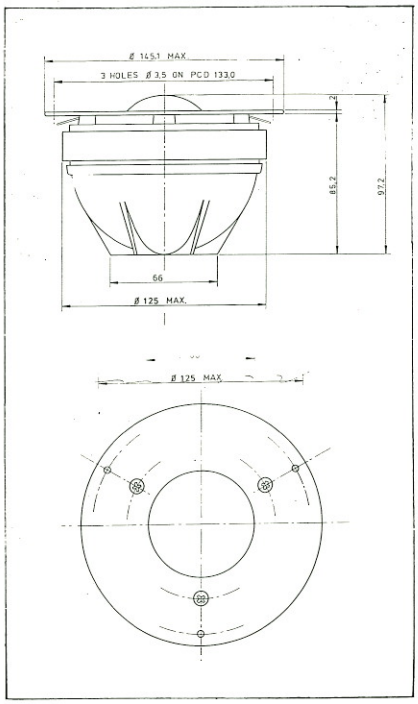
Compliance:				
suspension		C_{ms}	–	
acoustic		C_{as}	–	
equivalent volume		V_{as}	–	
Cone:				
eff. cone area		S_D	28	cm^2
moving mass		M_{ms}	2,78	g
lin. volume displacement		V_d	8,4	cm^3
mech. resistance		R_{ms}		
lin. excursion	P-P	X_{max}	3,0	mm
max. excursion	P-P		5,0	mm
*Frequency response:			500-9000	Hz
Harmonic distortion:			‹ 0,25	%
Intermodulation distortion:			‹ 0,01	%
Magnetsystem:				
total gap flux			1200	µWb
flux density			1,45	Tesla
gap energy			710	mWs
force factor		BxL	8,1	Tm
air gap volume		V_g	0,88	cm^3
air gap height			5	mm
air gap width			0,105	mm
Net weight:			1,95	kg

Overall dimensions:	ø 145 x 100		mm
Power handling:			
*nominal	DIN	250	W
*music	DIN	1000	W
transient	10 ms	1000	W
Q-factor:			
mechanical	Q_{ms}	1,00	
electrical	Q_{es}	0,56	
total	Q_{ts}	0,36	
Resonance frequency free air:	f_s	350	Hz
Sensitivity:	1W/1m	94	dB
Voice coil:			
diameter	d	54	mm
length	h	7	mm
layers	n	2	
inductance (1 kHz)	L_e	0,07	mH
nom. impedance	Z_{vc}	8	Ω
min. impedance	Z_{min}	6,4	Ω
DC resistance	R_e	4,6	Ω

Data given are as after 30 hours of running

*Depends on cabinet construction

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



All specifications subject to change without notice