DYNAUDIO®

TECHNOLOGY UNLIMITED

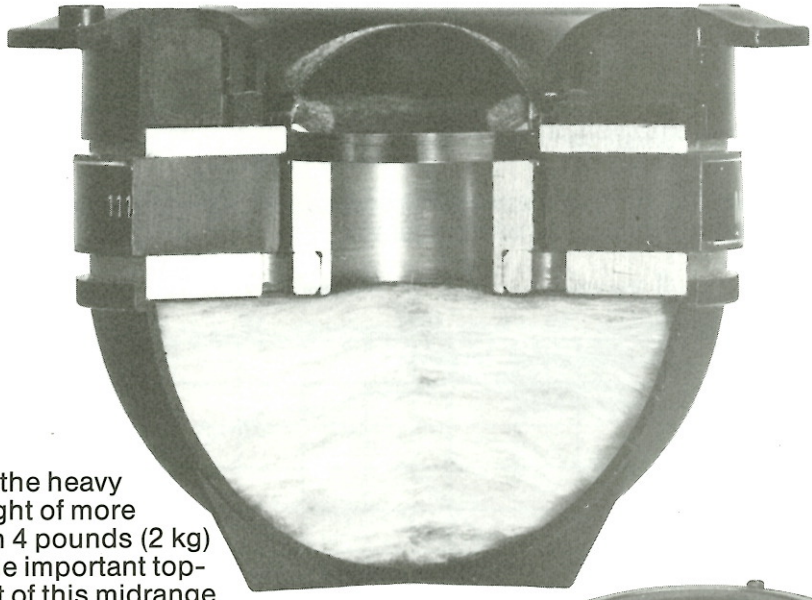
D-54

APPLICATIONS

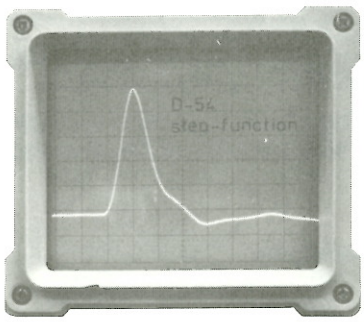
dome midrange for
3-, 4- and 5-way-systems
HiFi-midrange for
PA and commercial use

FEATURES

Soft dome type
very high sensitivity
high power handling
no crompression
soft–roll–off suspension
aperiodically damped
vented magnet motor
Magnaflex damping/ cooling
phase adjusted with D–28 and D–21



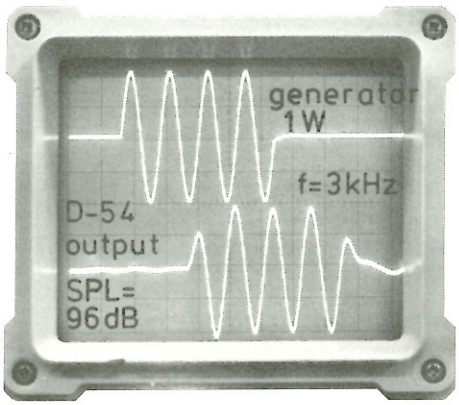
Not the heavy weight of more than 4 pounds (2 kg) is the important top-light of this midrange but the material together with the construction features made this type the most advanced unit: vented voice coil, maximum magnet power with 1200 uWb flux, separately damped back air volume. Not only in top high fidelity systems but more and more also in commercial systems the D-54 is used as it produces SPL's of more than 130 dB without compressions and extremely low THD.

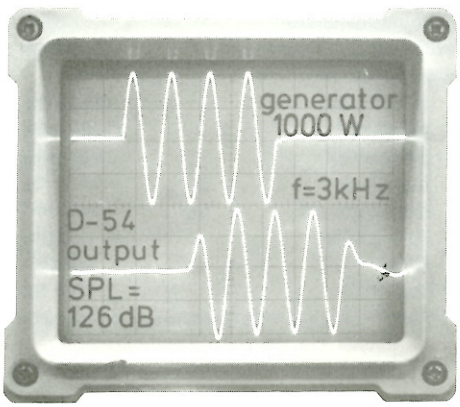


The STEP-FUNCTION of the D-54 is unusual clean. The rise indicates no break, the down slope is close to the ideal of an exponential function. No distortion or overshoot is to be noted.

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 30 dB higher at l000 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 l000 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 l00 dB, in spite of higher theoretical specifications. However this test exposes such anomalies between calculations and actual measurements.





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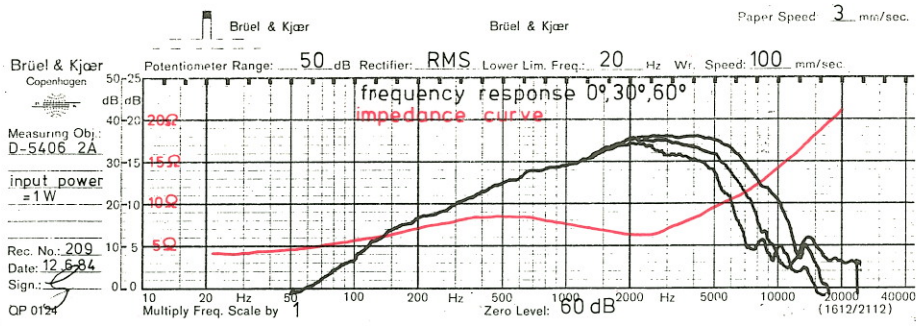
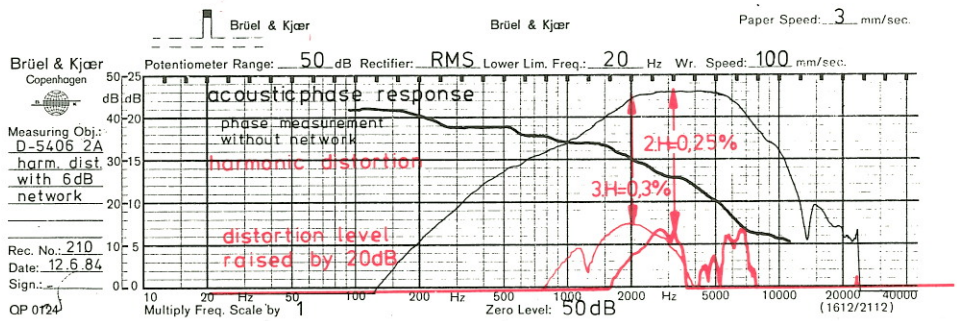
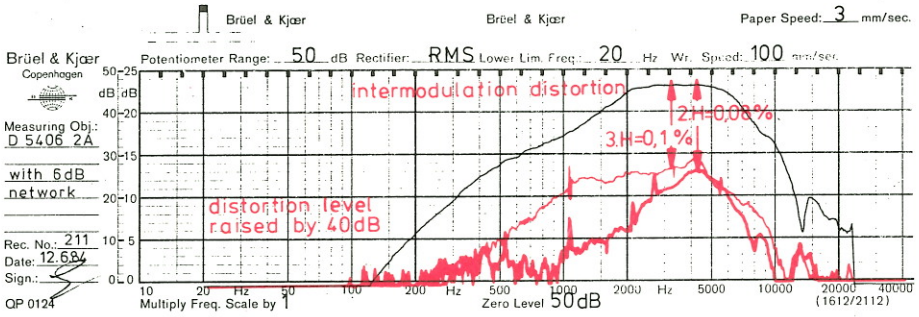


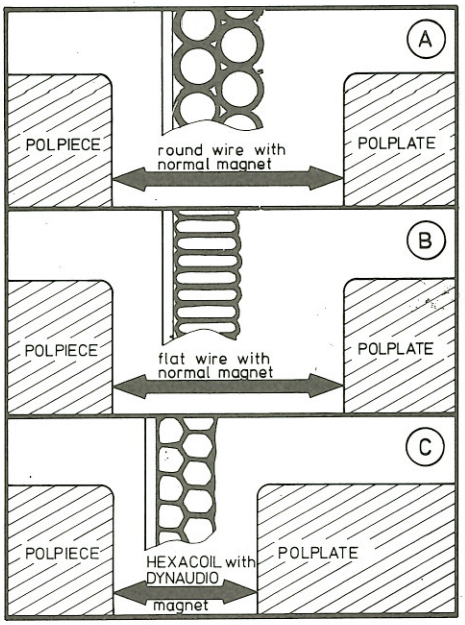
Usable from 800 Hz. Well damped resonance. No impedance peak. Off-axis curves run parallel without jumps.



Low harmonic distortions, even at high SPL. The acoustic phase keeps smooth also beyond operating area.



The intermodulation distortions are very low not only around 3 kHz but also at the low end.



Schematic drawing:
airgap of a usual magnet system with stamped pole pieces. A) with konventional V.C., B) with a flat wire V.C., picture C) shows a V.C. in hexacoil technique and precision turned pole pieces.

The power of a magnet motor is not only depending on size of magnet or internal filling factor of the V.C. but also on width of air gap because air leads the magnetic power quite bad - 2000 times less than iron. A narrow air gap may be obtained by making the pole pieces on a precision turning machine. All DYNAUDIO pole pieces are made like this. The result is more power, more energy, more dynamic.

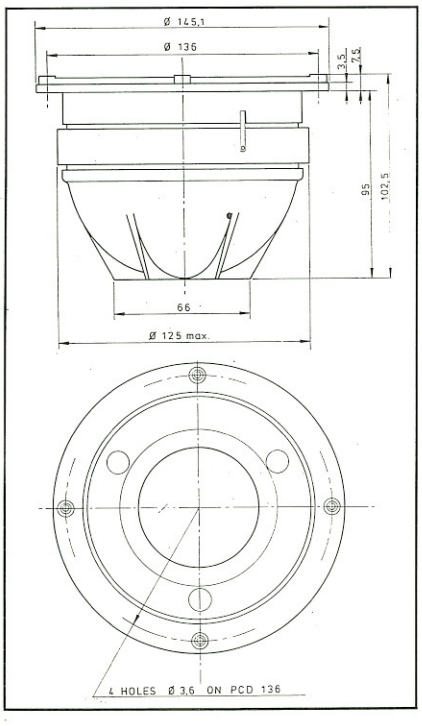
Compliance:			
suspension		Cms	–
acoustic		Cas	–
equivalent volume		Vas	–
Cone:			
eff. cone area		SD	28 cm²
moving mass		Mms	2,78 g
lin. vol. displacement		Vd	8,4 cm³
mech. resistance		Rms	–
lin. excursion	P-P	Xmax	3,0 mm
max. excursion	P-P		5,0 mm
* Frequency response:			800 - 7000 Hz
Harmonic distortion:			« 0,3%
Intermodulation distortion:			« 0,1%
Magnetsystem:			
total gap flux			1200 µ Wb
flux density			1,45 Tesla
gap energy			710 mWs
force factor		B x L	8,1 Tm
air gap volume		Vg	0,88 cm³
air gap height			5 mm
air gap width			1,05 mm
Net weight:			1,9 kg

Overall dimensions:		145 x 103 mm
Power handling:		
* nominal	DIN	250 W
* music	DIN	1000 W
transient	10 ms	1000 W
Q-factor:		
mechanical	Qms	1,00
electrical	Qes	0,56
total	Qts	0,36
Resonance frequency free air:	fs	350 Hz
Sensitivity:	1 W / 1 m	96 dB
Voice coil:		
diameter	d	54 mm
length	h	7 mm
layers	n	2
inductance (1 kHz)	Le	0,07 mH
nom. impedance	Zvc	8 Ω
min. impedance	Zmin	6,4 Ω
DC resistance	Re	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