

# DYNAUDIO®

TECHNOLOGY UNLIMITED

D-21 AF

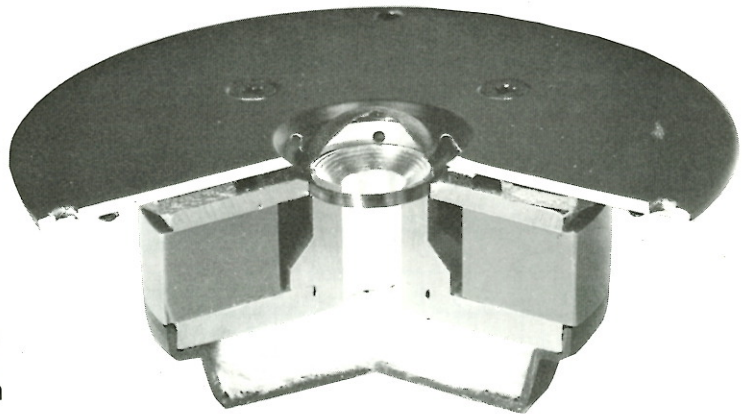
## APPLICATIONS

3/4" (21 mm) extended soft dome tweeter for 3-way systems or super tweeter in 4- or 5-way systems  
mobile sound  
For OEM use wide variety of faceplates

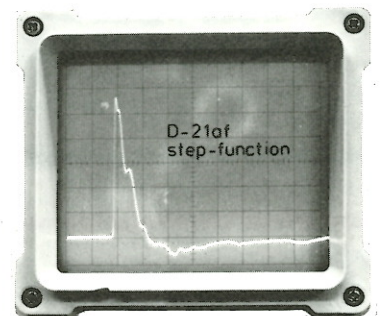
## FEATURES

very low distortion  
no phase shifts  
aperiodic damped double chamber construction  
rigid hexacoil technique  
soft roll off suspension  
liquid cooling  
wide dynamic range  
no compression of SPL

The D-21 AF is basically the famous DYNAUDIO D-21 but the extended dome version. The moving system is extremely light. The diaphragm is a doped fabric suspended in the only correct manner of a soft roll-off avoiding antiphase of the outer ring. The Magnaflex magnetic fluid optimizes the internal damping and dissipation of heat. The rigid Hexacoil withstands transients of far more than 1000 watts of clean music signals. The response gives a transparent, crisp and clear sound with a good resolution. The off-axis curves at 30° and 60° show the good dispersion, on-axis the curve runs linear up to 40 kHz.

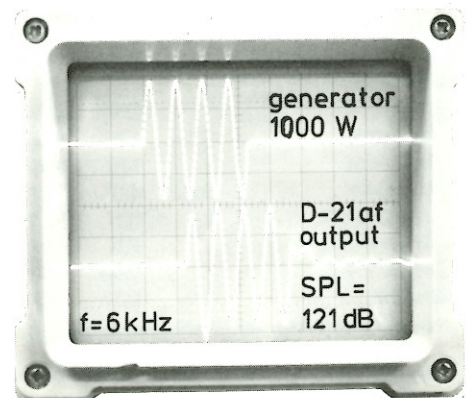
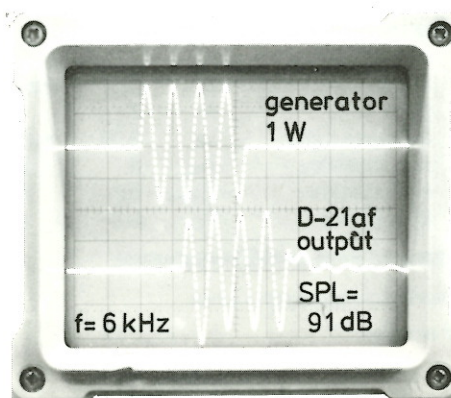


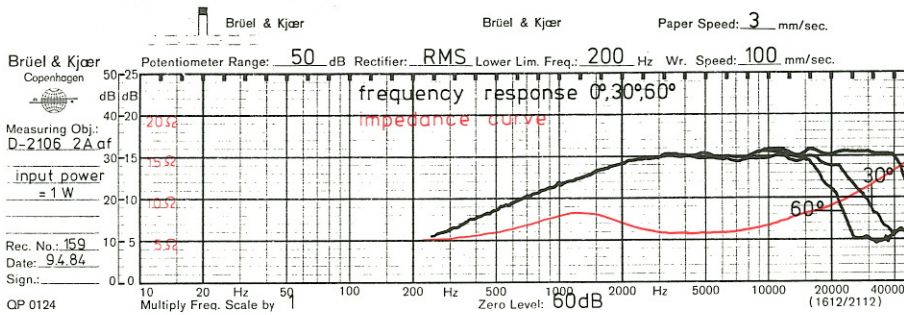
No overshoot, no ringing: result of the excellent damping and correct construction of shape of dome as well as the right material engineering.



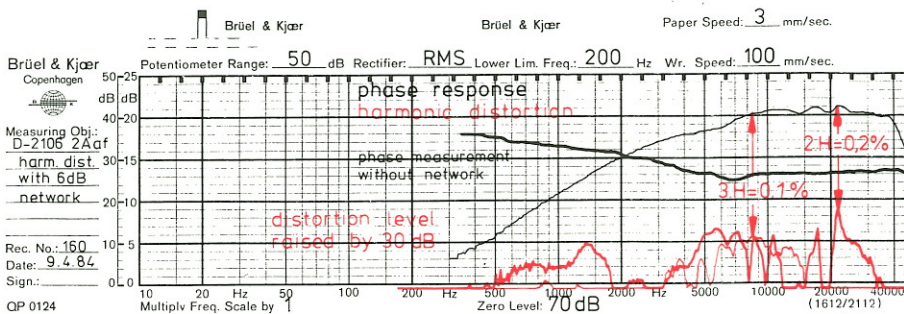
Tone bursts are the best way to obtain an accurate picture of overall acoustic performance. Regrettably they are mostly used only to test rise-time and ringing - which shows much more clearly with a step function test! With a tone burst, all the moving parts of a speaker can be loaded without burning 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.

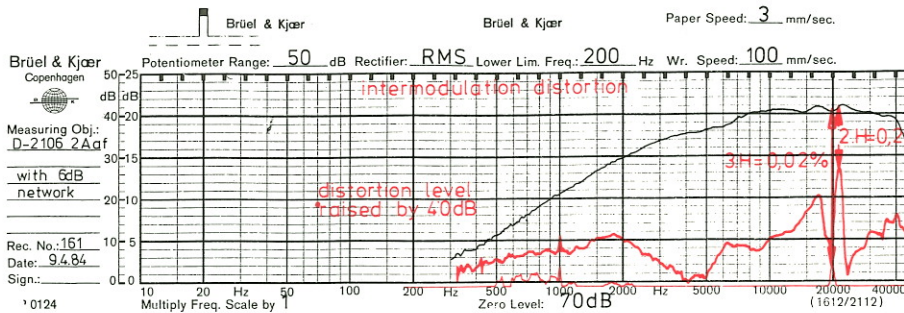




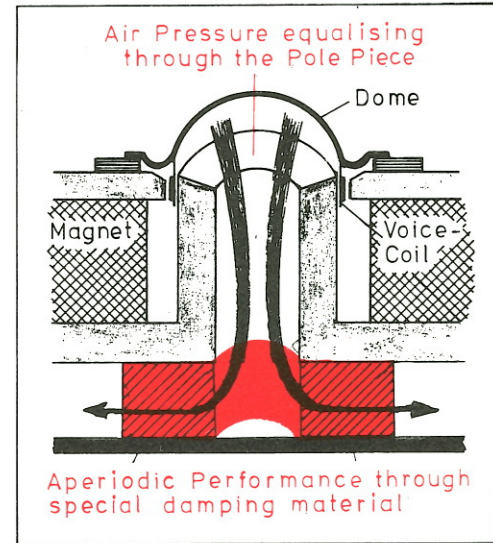
Frequency response from 3.000 up to 40.000 Hz  $\pm 1$  dB!! The impedance curve shows the resonance well damped.



The acoustically measured phase indicates no jumps. The harmonic distortions are very low figures.



Level had to be raised by 40 dB (!)



The advantages of the aperiodic damping are consequently applied to all DYNAUDIO dome constructions and may be achieved to all cabinet enclosures by using the VARIOVENT. Aperiodic damping may be compared with a shock absorber in a motor car. Physically the aperiodic damping acts like a DC-resistance in the oscillating circuit.

Compliance:		Overall dimensions:	Ø 110 x 42 mm	
suspension	$C_{ms}$	Power handling:	DIN 600	W
acoustic	$C_{as}$	*nominal	DIN 1200	W
equivalent volume	$V_{as}$	*music	10 ms	1000 W
Cone:		transient		
eff. cone area	$S_D$	Q-factor:	$Q_{ms}$	0,62
moving mass	$M_{ms}$	mechanical	$Q_{es}$	1,21
lin. volume displacement	$V_d$	electrical	$Q_{ts}$	0,41
mech. resistance	$R_{ms}$	total	Resonance frequency free air: $f_s$	1300 Hz
lin. excursion P-P	$X_{max}$			
max. excursion P-P	2			
*Frequency response:	1500-45000 Hz	Sensitivity:	IW/lm	91 dB
Harmonic distortion:	< 0,2 %	Voice coil:		
Intermodulation distortion:	< 0,2 %	diameter	d	21 mm
Magnetsystem:		length	h	3,2 mm
total gap flux	280	layers	n	2
flux density	1,75	inductance (1 kHz)	$L_e$	0,08 mH
gap energy	125	nom. impedance	$Z_{vc}$	8 Ω
force factor	$B \times L$	min. impedance	$Z_{min}$	6,4 Ω
air gap volume	$V_g$	DC resistance	$R_e$	5,3 Ω
air gap height	2,5			
air gap width	0,65			
Net weight:	0,55 kg			

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

