# DYNAUDIO ®

TECHNOLOGY UNLIMITED

D-28

1.1 inch (28 mm) soft dome
tweeter for 2- and 3-way
  systems
with supertweeter also
  in 4- and 5-way systems
mobile hifi
commercial and PA

soft roll-off suspension
vented magnet motor
aperiodically damped
Hexacoil technique
Magnaflex cooling / damping
flexible connector wires
high power handling
dynamic range more than
  127 dB - no compression
very high efficency
very low THD

The D - 28 has the
most advanced tweeter
technology. Regularly improve-
ments have secured this position
for many years. Professional users
value the enormyous dynamic range
of more than 127 dB SPL without
compression which is important with to-
days high class high power electronic.
The exceptional shape eases the time align-
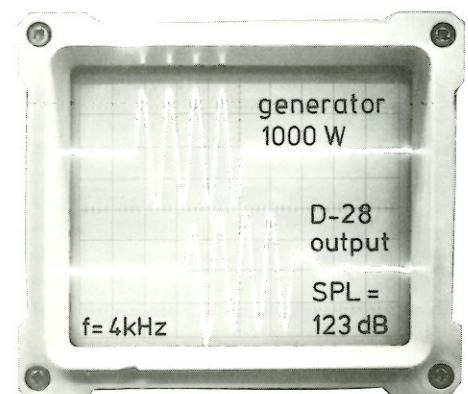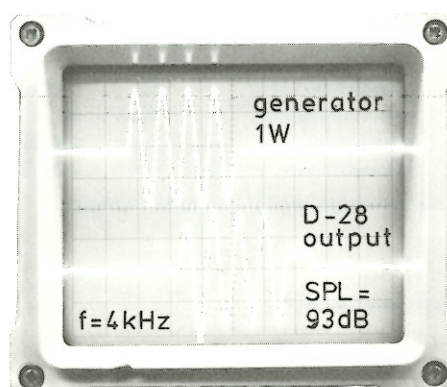ment and improves the efficency without any
horn characteristic.
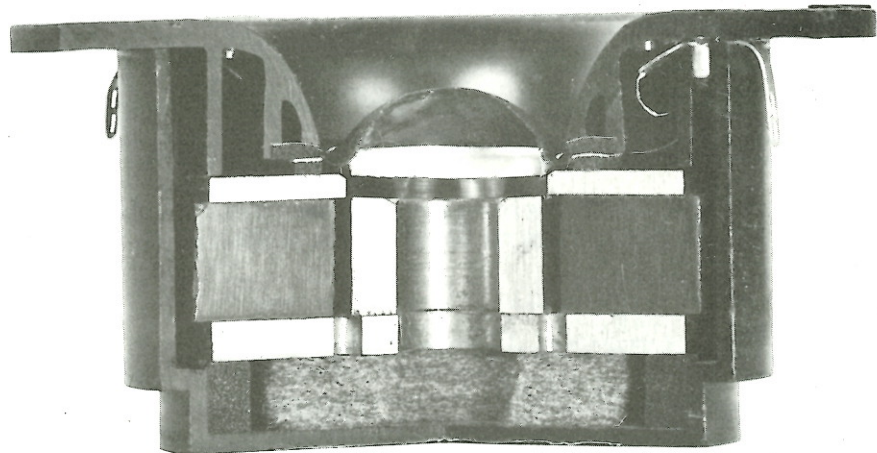
The rise time of a speaker is measured by means of a STEP-FUNCTION. The total is
set to be 100 %, then 10 % and 90 % are marked. The first 10 % is the phase of acce-
leration, the last 10 % is the deceleration phase of the diaphragm. The 80 % between
both marks are defined as the movement of the diaphragm. The time needed for this
phase is called the rise time. The step function of the D-28 often is used as a scientific
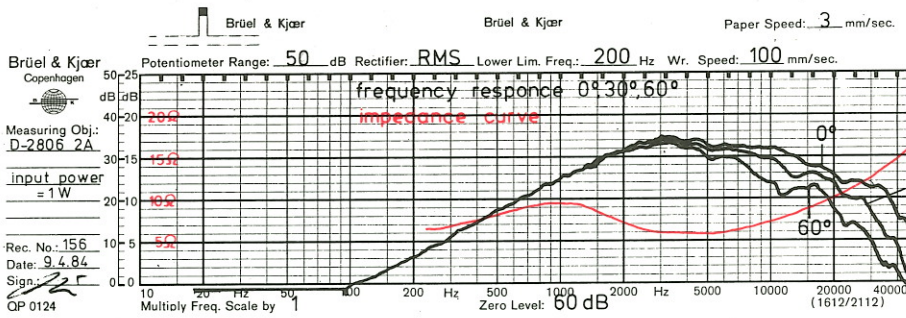example because of its linearity.
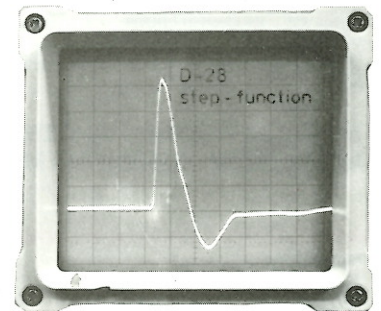
TONE BURSTS
Tone bursts are the best way to obtain an accurate picture of overall acoustic performance. Regrettably they are mostly
used only to test rise-time and ringing - which shows much more clearly with a step function test! With a tone burst, all the
moving parts of a speaker can be loaded without burning the voice coil. With a given frequency the SPL should be 30 dB
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 repro-
duce 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
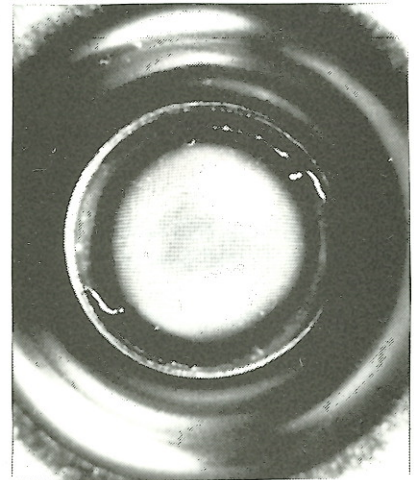figures and not measured values.

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 speci-
fications. However this test
exposes such anomalies between
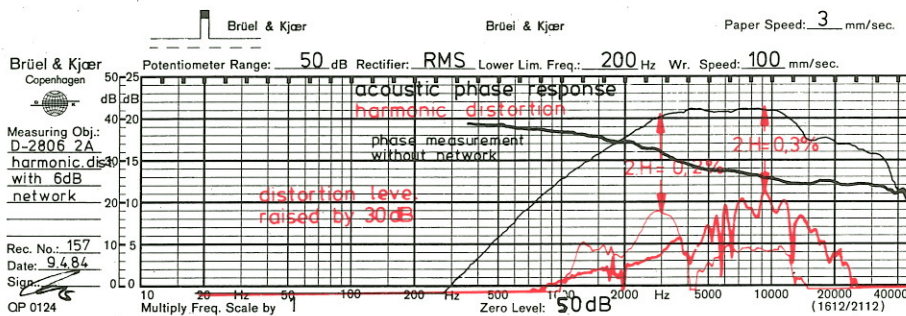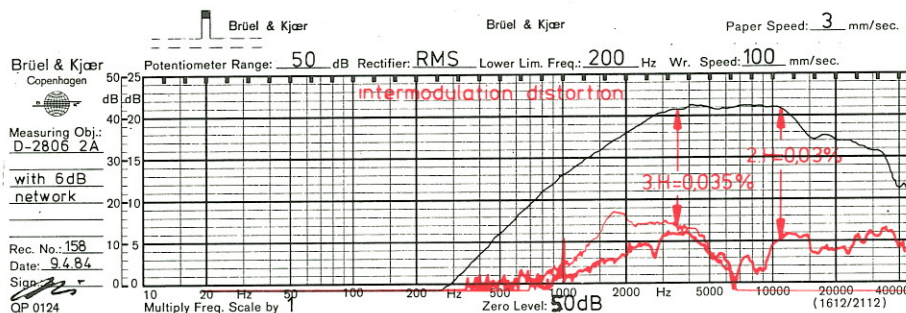calculations and actual
measurements.

Brüel & Kjær — Copenhagen

Potentiometer Range: 50 dB Rectifier: RMS Lower Lim. Freq.: 200 Hz Wr. Speed: 100 mm/sec. Paper Speed: 3 mm/sec.

Measuring Obj.: D-2806 2A
input power = 1 W
Rec. No.: 156
Date: 9.4.84
Sign.
QP 0124

frequency responce 0° 30° 60°
impedance curve
Multiply Freq. Scale by 1 Zero Level: 60 dB (1612/2112)

The 30° and 60° off-axis curves prove clearly that the special house construction has no directional/horn effect at all.

Brüel & Kjær — Copenhagen

Potentiometer Range: 50 dB Rectifier: RMS Lower Lim. Freq.: 200 Hz Wr. Speed: 100 mm/sec. Paper Speed: 3 mm/sec.

Measuring Obj.: D-2806 2A
harmonic dist.
with 6 dB network
Rec. No.: 157
Date: 9.4.84
Sign.
QP 0124

acoustic phase response
harmonic distortion
phase measurement without network
distortion level raised by 30 dB
2 H = 0,2%   2 H = 0,3%
Multiply Freq. Scale by 1 Zero Level: 50 dB (1612/2112)

The acoustic phase runs linear up to 50 kHz.

Brüel & Kjær — Copenhagen

Potentiometer Range: 50 dB Rectifier: RMS Lower Lim. Freq.: 200 Hz Wr. Speed: 100 mm/sec. Paper Speed: 3 mm/sec.

Measuring Obj.: D-2806 2A
with 6 dB network
Rec. No.: 158
Date: 9.4.84
Sign.
QP 0124

intermodulation distortion
2 H = 0,03%
3 H = 0,035%
Multiply Freq. Scale by 1 Zero Level: 50 dB (1612/2112)

What other system has datas like these?
Intermodulation distortion level had to be raised by 40 dB.

DYNAUDIO tweeter and midrange domes are always made of special soft cloth. This is important for the resolution and the precision of the response of the high end.

A certain bending pattern is unavoidable to the dome material while forcing it back and forwards. With soft material this effect is not audible. The harder the diaphragm material is (i.e. plastic, aluminium, titanium, beryllium etc.) the more this bending effect is heard and measured as the distortion potential.

Compliance:			
suspension	Cms	–	
acoustic	Cas	–	
equivalent volume	Vas	–	
Cone:			
eff. cone area	SD	8,5	cm²
moving mass	Mms	0,51	g
lin. vol. displacement	Vd	6,0	cm³
mech. resistance	Rms	–	
lin. excursion P-P	Xmax	0,7	mm
max. excursion P-P		3,2	mm
* Frequency response:		1200 / 25000 Hz	
Harmonic distortion:		< 0,3	%
Intermodulation distortion:		< 0,035	%
Magnetsystem:			
total gap flux		340	µWb
flux density		1,52	Tesla
gap energy		156	mWs
force factor	B x L	4,2	Tm
air gap volume	Vg	0,16	cm³
air gap height		2,5	mm
air gap width		0,75	mm
Net weight:		0,6	kg

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

Overall dimensions:		Ø 110 x 55 mm	
Power handling:			
* nominal	DIN	300	W
* music	DIN	1200	W
transient	10 ms	1000	W
Q-factor:			
mechanical	Qms	0,61	
electrical	Qes	1,11	
total	Qts	0,39	
Resonance frequency free air: fs		700	Hz
Sensitivity:	1 W / 1 m	93 dB	
Voice coil:			
diameter	d	28	mm
length	h	3,2	mm
layers	n	2	
inductance (1 kHz)	Le	0,09	mH
nom. impedance	Zvc	8	Ω
min. impedance	Zmin	6,4	Ω
DC resistance	Re	5,3	Ω

Data given are as after 30 hours of running

Ø 110
Ø 74
Ø 82,8
3,5
8,2
54,2
3 x 120°
3 HOLES Ø 3,6 ON PCD 101

All specifications subject to change without notice