DYNAUDIO®

30 W-100

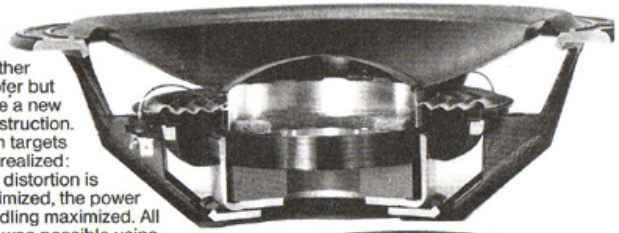
TECHNOLOGY UNLIMITED

APPLICATIONS

12" woofer for
3-, 4- and 5-way systems
subwoofer constructions
transmission line
bass reflex and
aperiodic damped systems

FEATURES

rigid magnesium die cast basket with aerodynamic ribs
vented long throw magnet system
high BL-factor
lowest distortion figures
very low rise time
PHA cone material
haxaciol technique
tropic proof

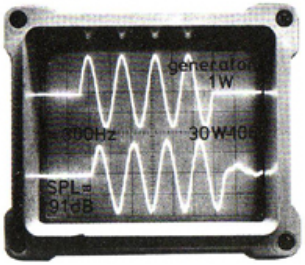


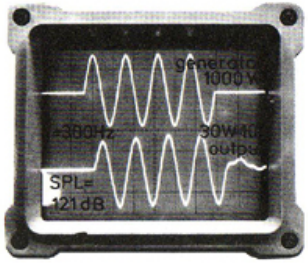
Not just another woofer but quite a new construction. High targets are realized: The distortion is minimized, the power handling maximized. All this was possible using the center magnet system, the PHA-cone material and the advanced DYNAUDIO principles. The system is easily handling 600 watts of clean music programme thanks to the center magnet system with the 4" (100 mm) VC. The intermodulation distortion is hardly measurable and due to the PHA cone not exceeding 0.8% even at the lowest end of the B&K-test equipment with 20 Hz. Normally good woofers show figures about 10-20%. The 30 W-100 is a challenge to the manufactures of big high end power amps.

When using a STEP-FUNKTION judgement of the slope is most important. The ideal would be if the slope rolls off in an e-funktion. The size of area below the slope indicates the low end. Short jumps of the slope show misbehaviors of the speaker. Dome tweeters i.e. have the ideal slope but even slopes of very good cone speakers are a little weavy. These waves indicate coloration of response. The shown step of 30 W-100 has no wave of this kind.

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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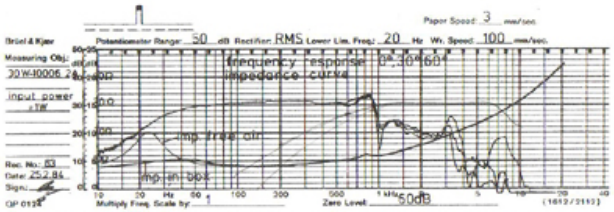
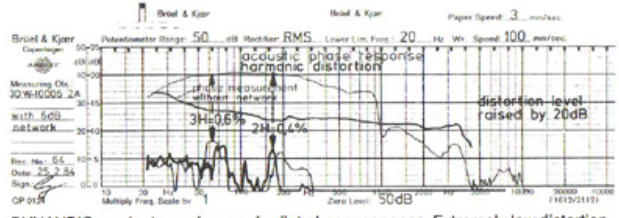
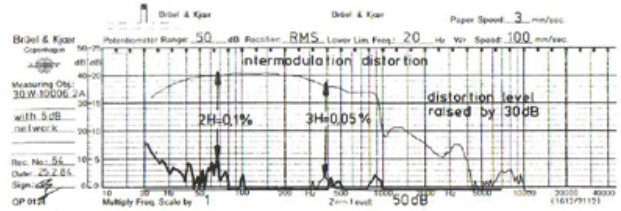


The radiation of sound is equal at all position (0°, 30°, 60°) and allows ideal employment up to 500Hz. Used in enclosure the impedance does not exceed 10 Ohms.



DYNAUDIO products are famous for flat phase response. Extremely low distortion, below 0.8% totally



Today even complicated high technology products may be produced in large quantities. Some of these products have limited markets which in return limits the use of automatic tools. In these small series the precision, know how and skilled labour decide the quality of the ready product. About one third of the DYNAUDIO staff works together for more than 10 years.

Compliance:			Overall dimensions:		300 x 104,5 mm
suspension	C_{ms}	$1,21 \cdot 10^{-3}$ m/N	Power handling:		
acoustic	C_{as}	$1,94 \cdot 10^{-6}$ m³/N	*nominal	DIN	450 W
equivalent volume	V_{as}	269 l	*music	DIN	600 W
Cone:			transient	10 ms	1000 W
eff. cone area	S_D	400 cm²	Q-factor:		
moving mass	M_{ms}	35,2 g	mechanical	Q_{ms}	2,70
lin. volume displacement	V_d	320 cm³	electrical	Q_{es}	0,803
mech. resistance	R_{ms}	1,98 kg/s	total	Q_{ts}	0,619
lin. excursion P–P	X_{max}	8 mm	Resonance frequency free air:	f_s	24 Hz
max. excursion P–P		28 mm	Rise time		89 µs
*Frequency response:		22–900 Hz	Sensitivity:	1W/1m	91 dB
Harmonic distortion:		< 0,8 %	Voice coil:		
Intermodulation distortion:		< 0,6 %	diameter	d	100 mm
Magnetsystem:			length	h	16 mm
total gap flux		1300 µ Wb	layers	n	2
flux density		0,51 Tesla	inductance (1 kHz)	L_e	0,73 mH
gap energy		445 mWs	nom. impedance	Z_{nc}	8 Ω
force factor	B x L	6,26 Tm	min. impedance	Z_{min}	6,4 Ω
air gap volume	V_g	4,27 cm³	DC resistance	R_e	5,85 Ω
air gap height		8 mm			
air gap width		1,68 mm			
Net weight:		2,1 kg			

Data given are as after 30 hours of running

*Depends on cabinet construction

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