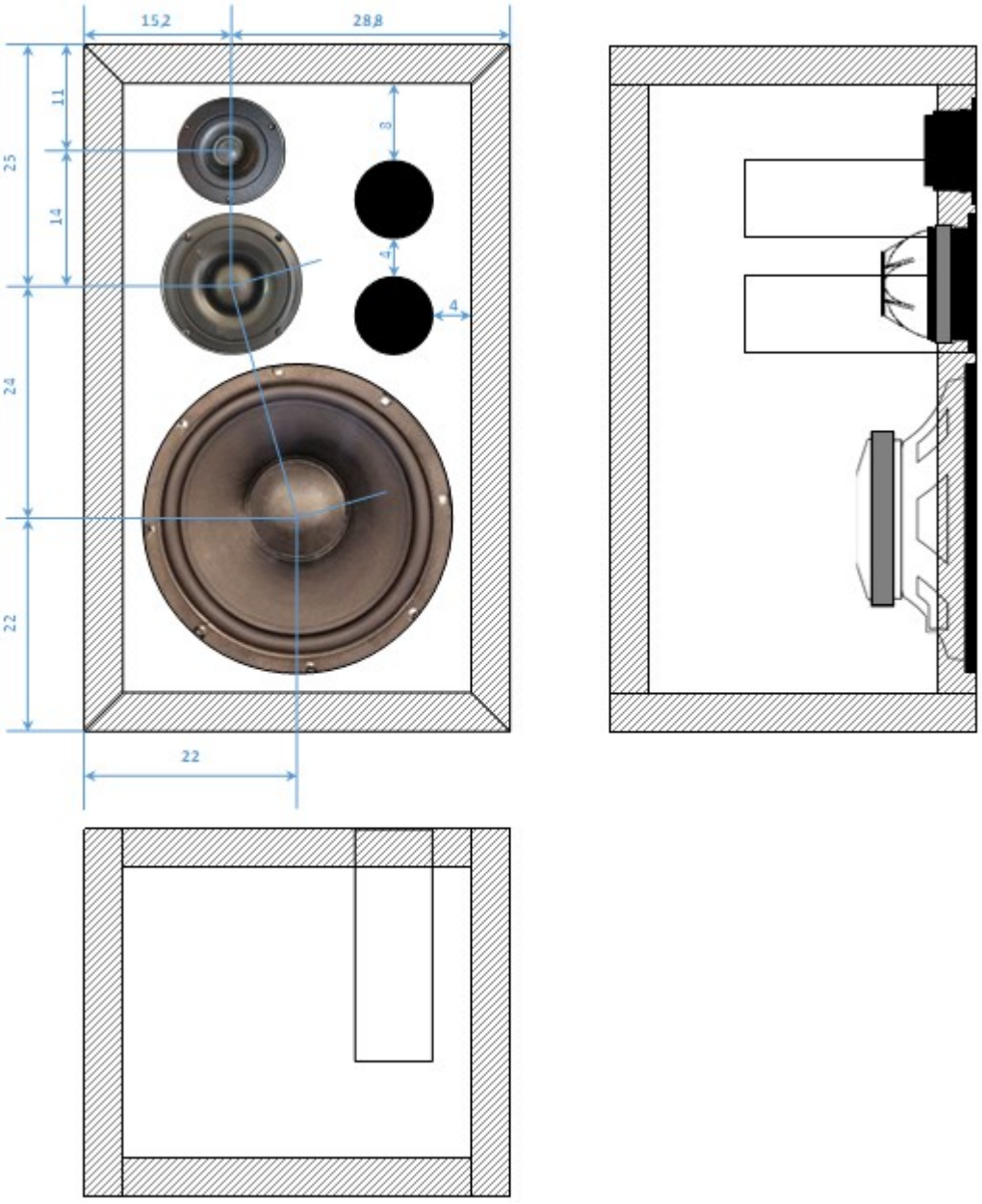
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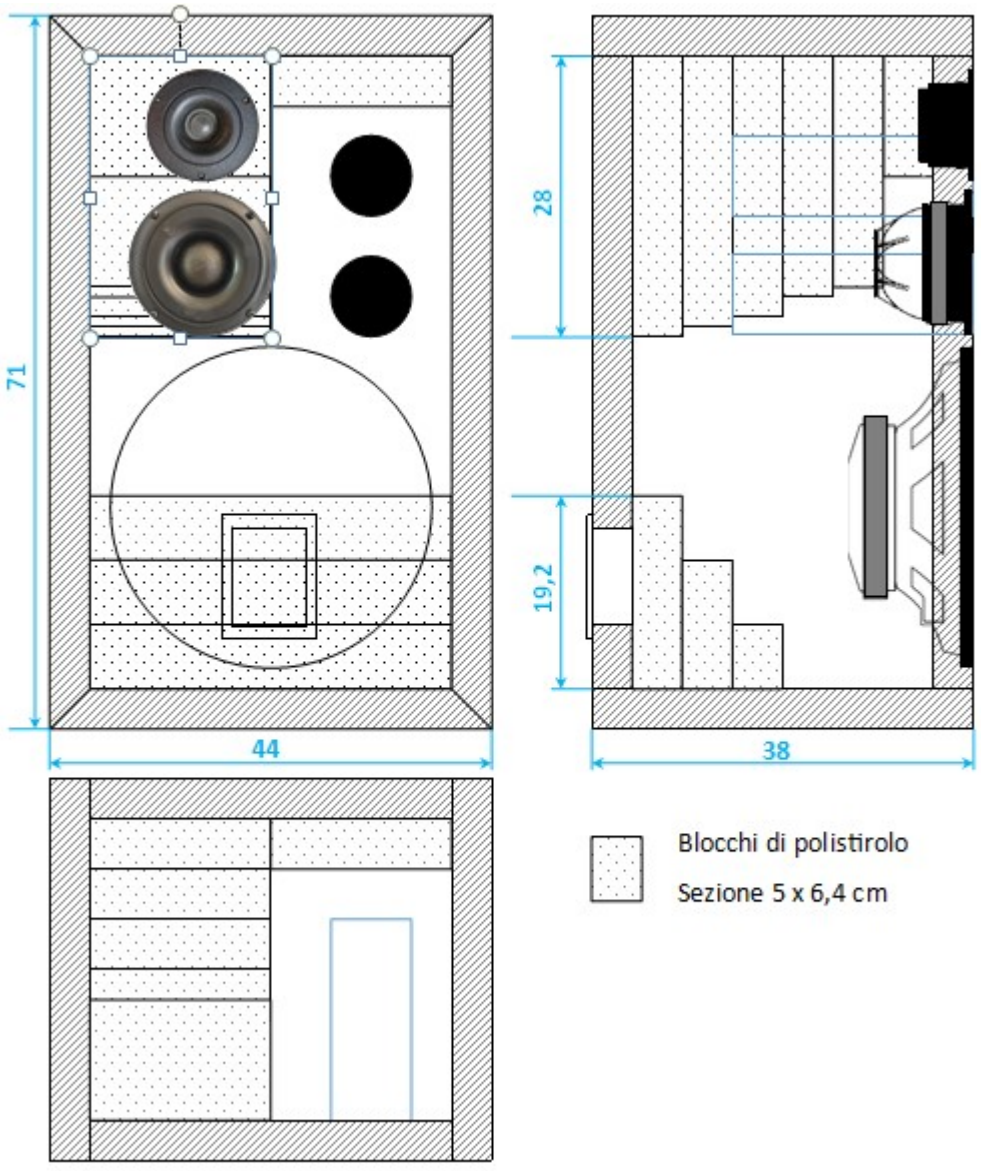
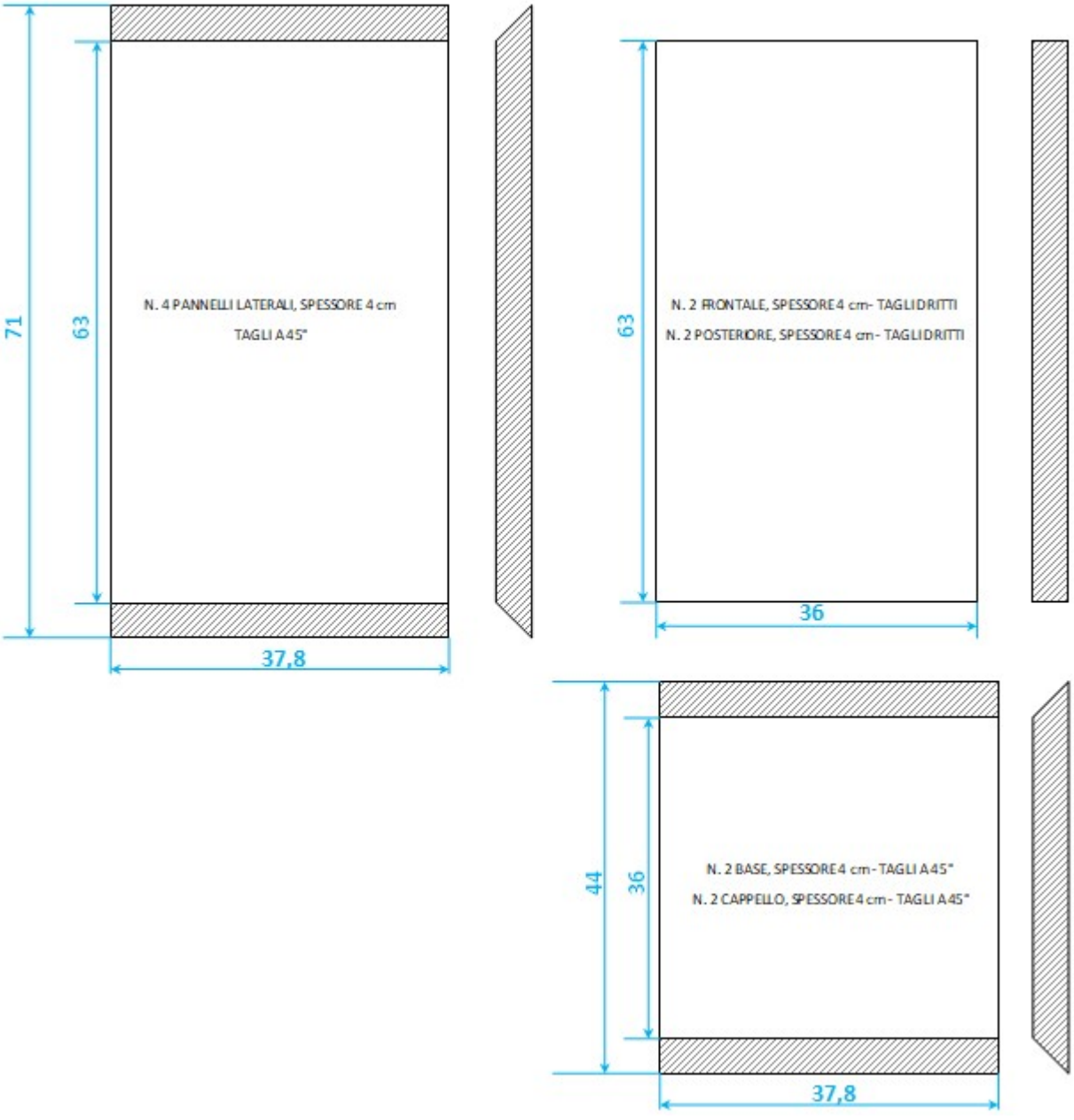
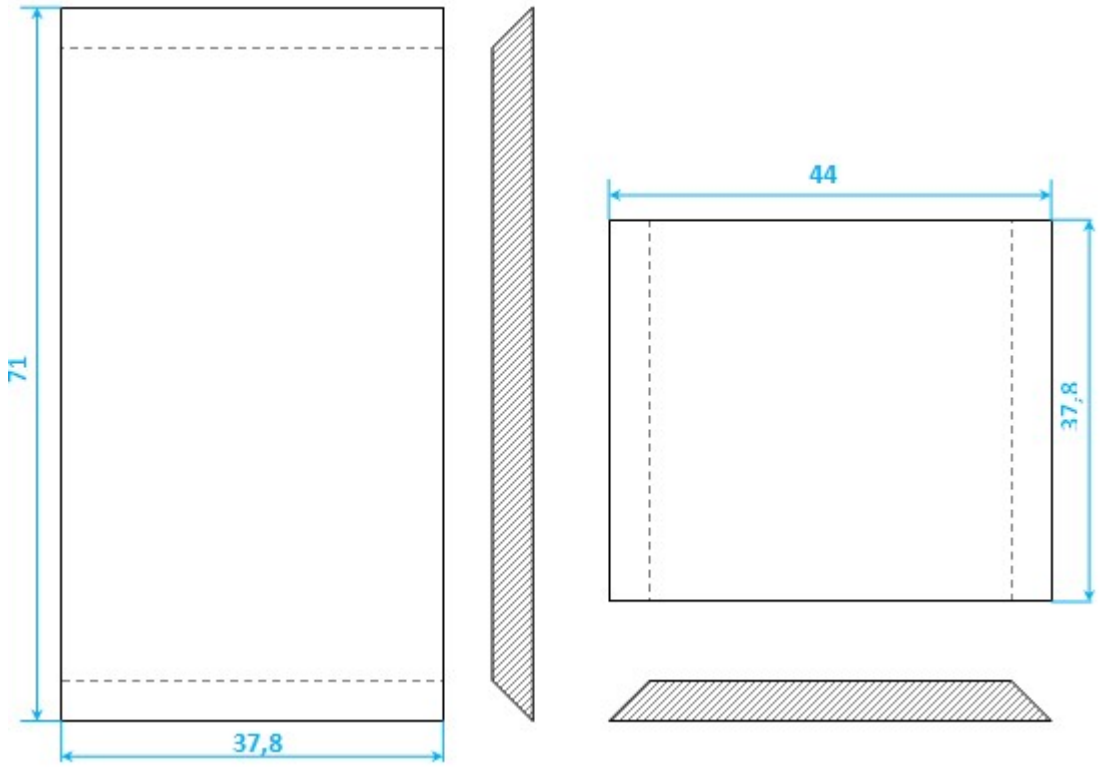

71
44
28
19,2
38
Blocchi di polistirolo
Sezione 5 x 6,4 cm


71
63
N. 4 PANNELLI LATERALI, SPESSORE 4 cm
TAGLI A 45°
37,8
63
N. 2 FRONTALE, SPESSORE 4 cm - TAGLI DRITTI
N. 2 POSTERIORE, SPESSORE 4 cm - TAGLI DRITTI
36
44
36
N. 2 BASE, SPESSORE 4 cm - TAGLI A 45°
N. 2 CAPPELLO, SPESSORE 4 cm - TAGLI A 45°
37,8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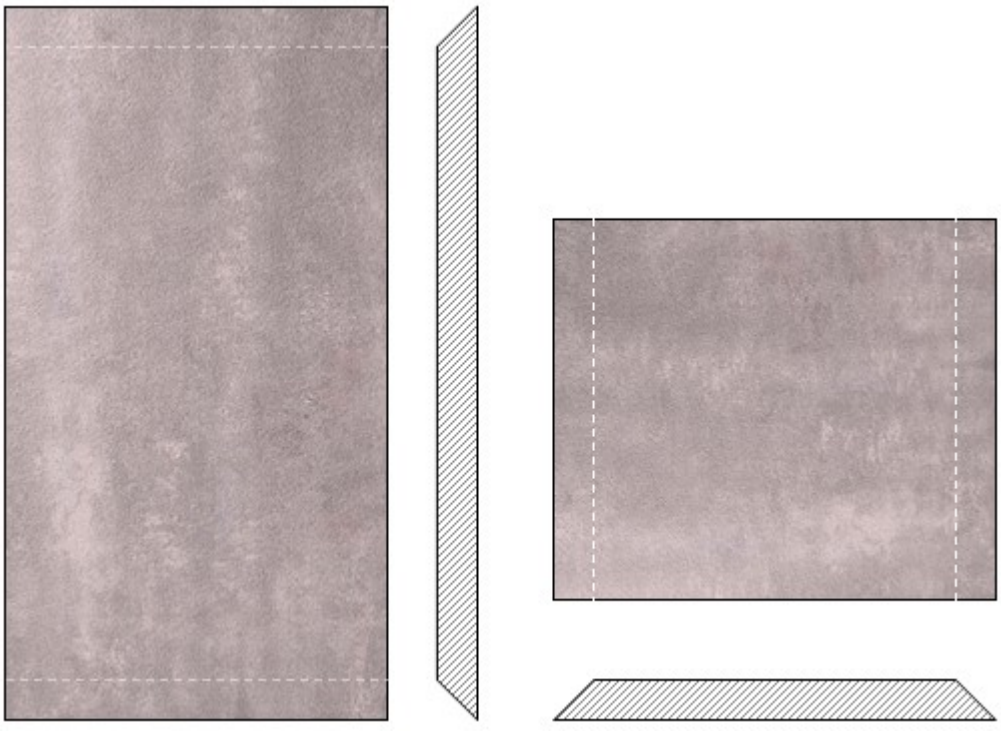
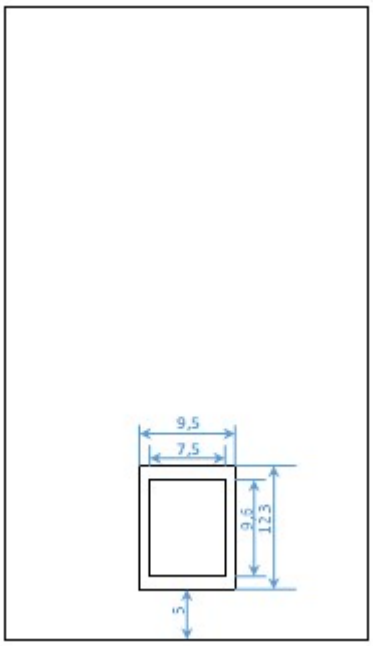
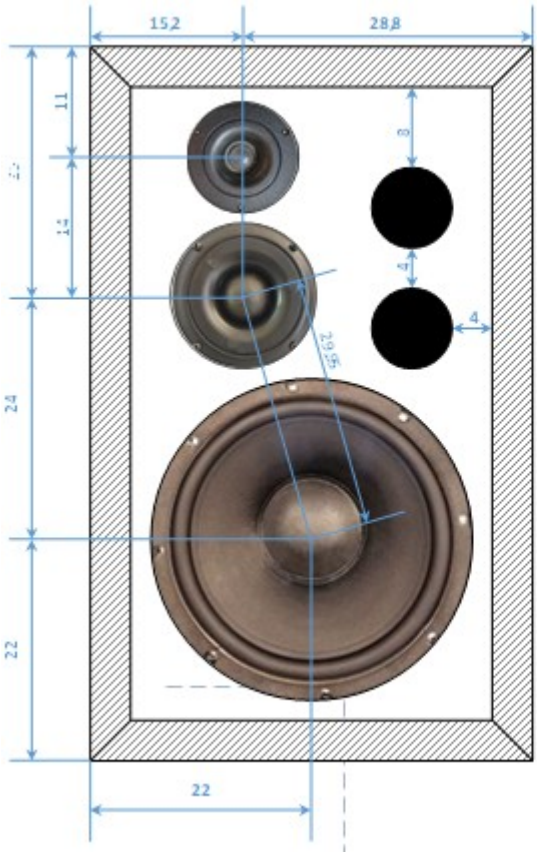



9,5
7,5
9,6
12,3
5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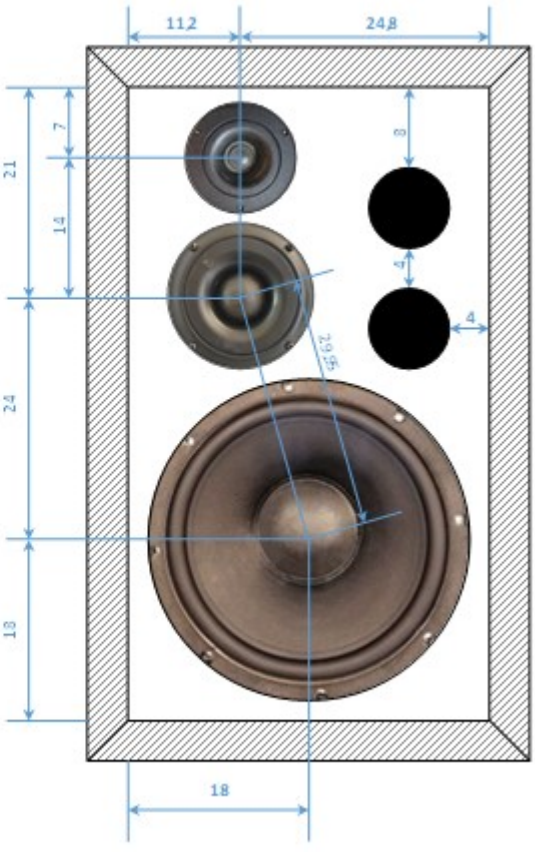
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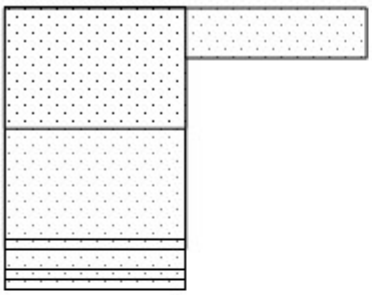
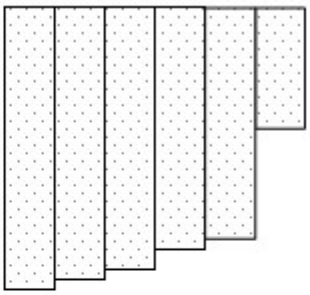
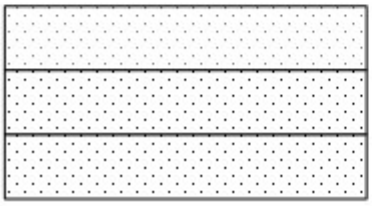
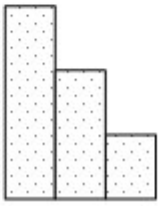
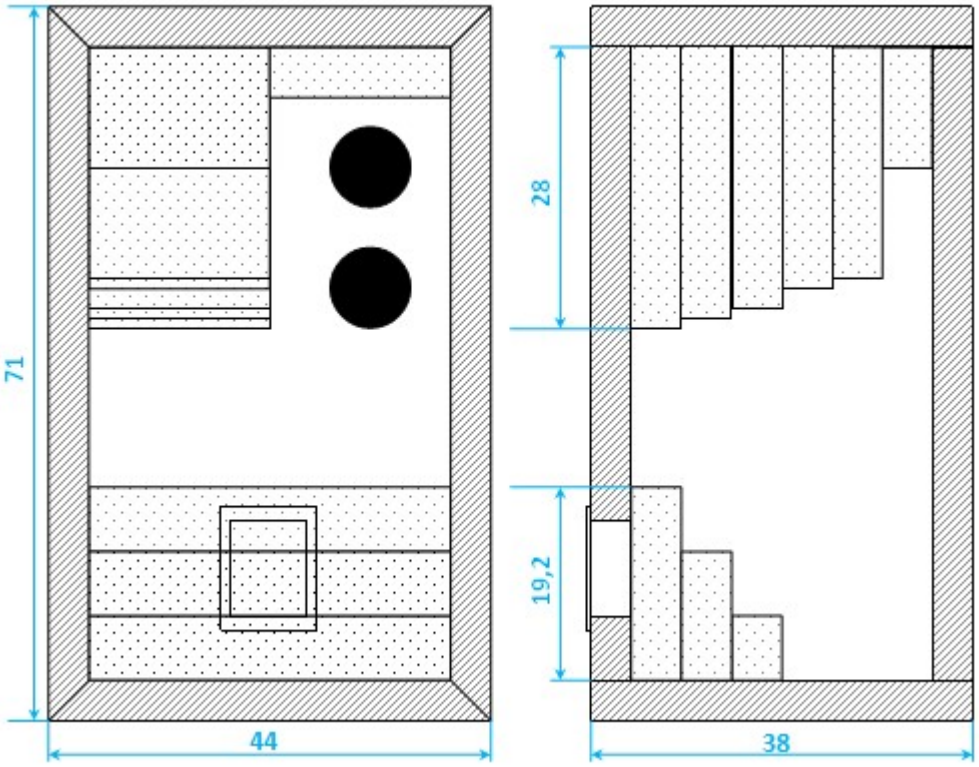









71
44
28
19,2
38

	L	H	P	
A1	3,6	0,64	0,49	1,12896
B1	3,6	0,64	0,49	1,12896
C1	3,6	0,64	0,49	1,12896
D1	0,64	2,8	0,49	0,87808
E1	0,64	2,8	0,49	0,87808
F1	0,64	2,8	0,49	0,87808
			TOT	6,02112

	L	H	P	
A2	3,6	0,64	0,49	1,12896
B2	3,6	0,64	0,49	1,12896
D2	0,64	2,7	0,49	0,84672
E2	0,64	2,7	0,49	0,84672
F2	0,64	2,7	0,49	0,84672
			TOT	4,79808

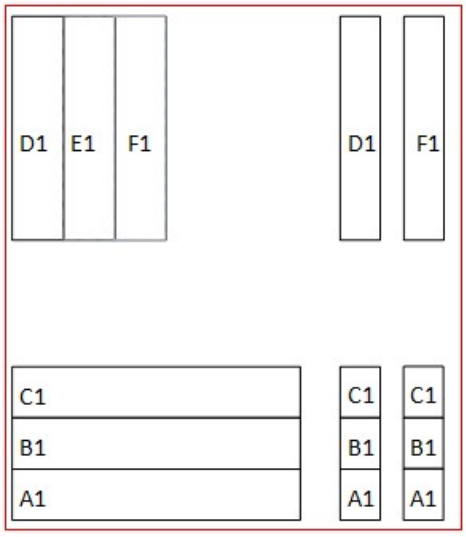
	L	H	P	
A3	3,6	0,64	0,49	1,12896
D3	0,64	2,6	0,49	0,81536
E3	0,64	2,6	0,49	0,81536
F3	0,64	2,6	0,49	0,81536
			TOT	3,57504

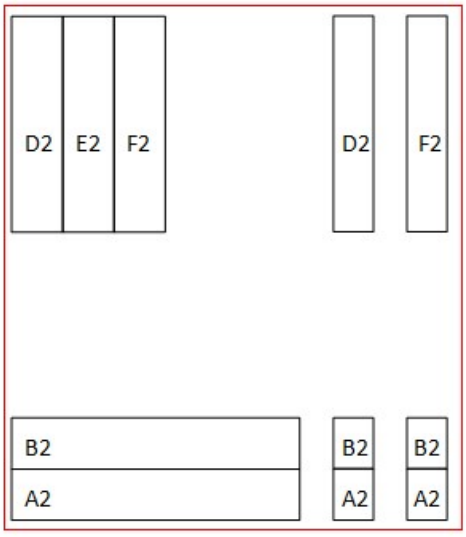
	L	H	P	
D4	0,64	2,4	0,49	0,75264
E4	0,64	2,4	0,49	0,75264
F4	0,64	2,4	0,49	0,75264
			TOT	2,25792

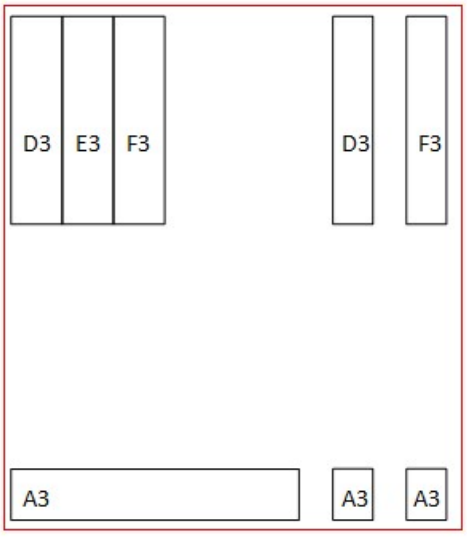
	L	H	P	
D5	0,64	2,3	0,49	0,72128
E5	0,64	2,3	0,49	0,72128
F5	0,64	2,3	0,49	0,72128
			TOT	2,16384

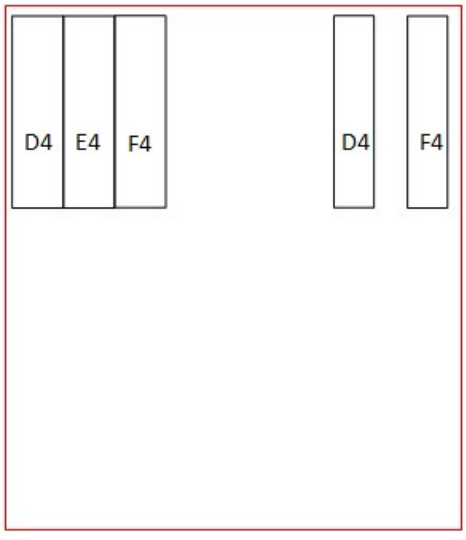
	L	H	P	
D6	0,64	1,2	0,49	0,37632
E6	0,64	1,2	0,49	0,37632
F6	0,64	1,2	0,49	0,37632
G6	0,64	4,2	0,49	1,31712
			TOT	2,44608

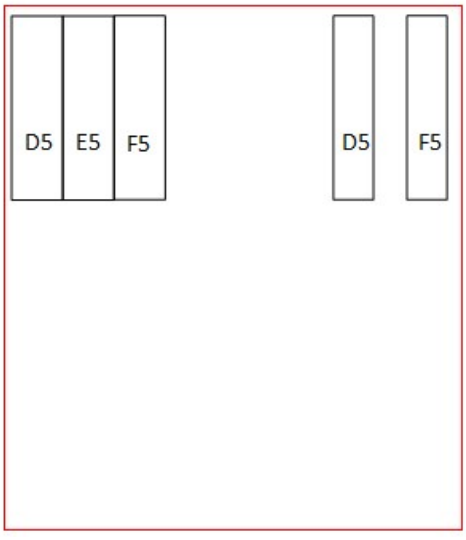
TOT **21,26** litri

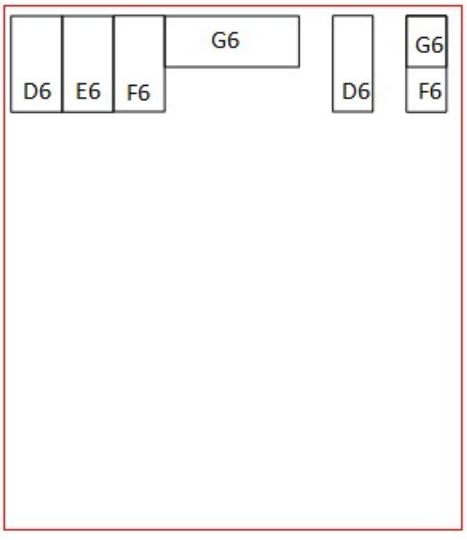


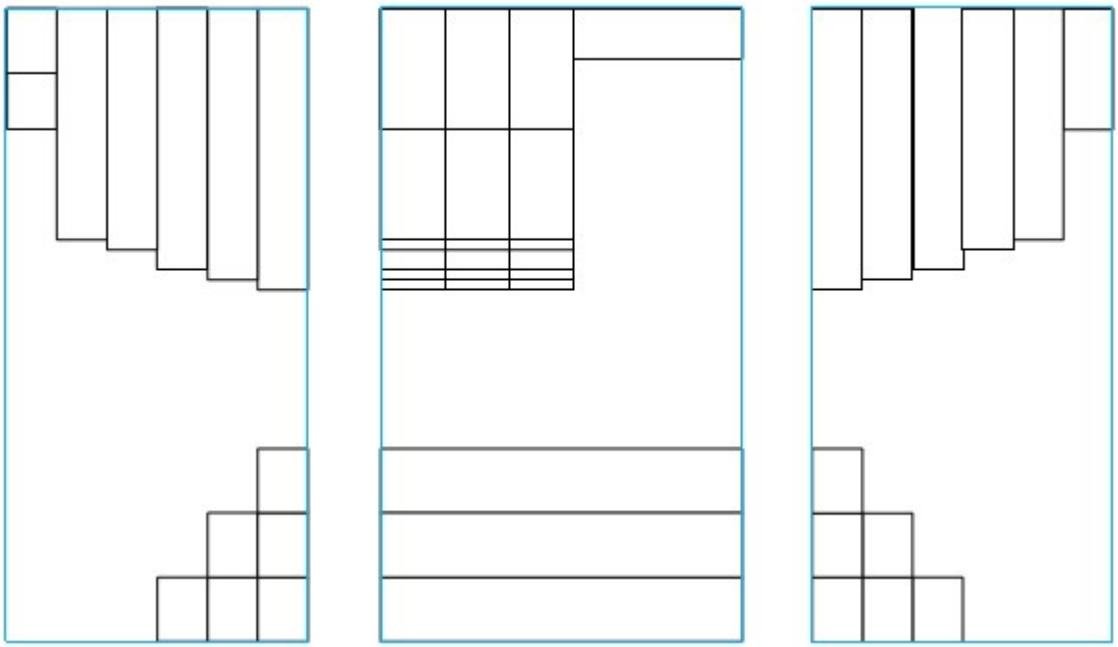


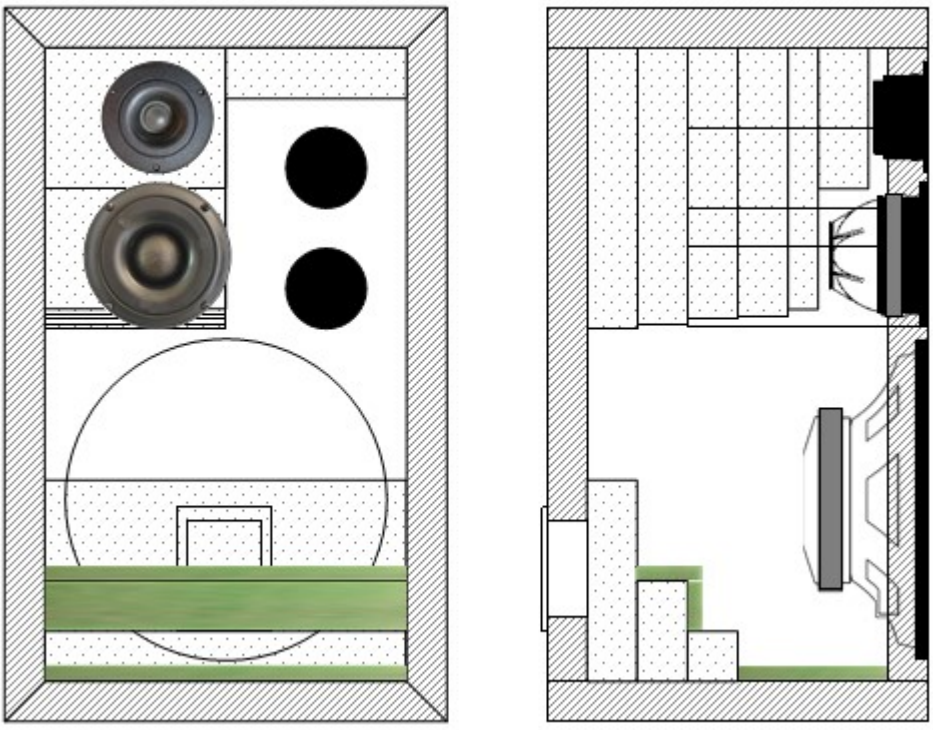


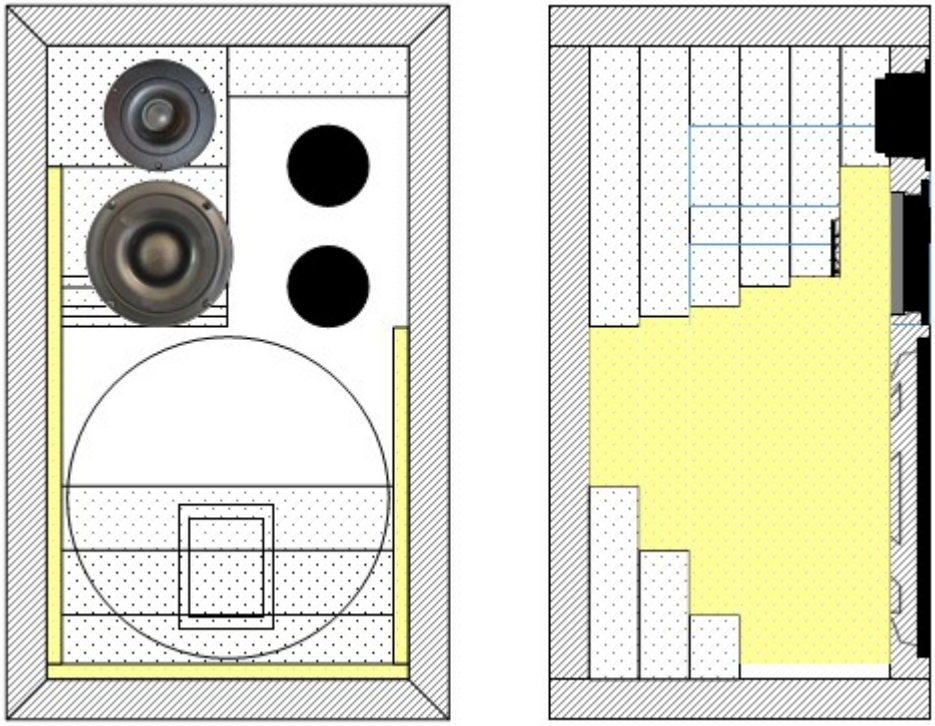






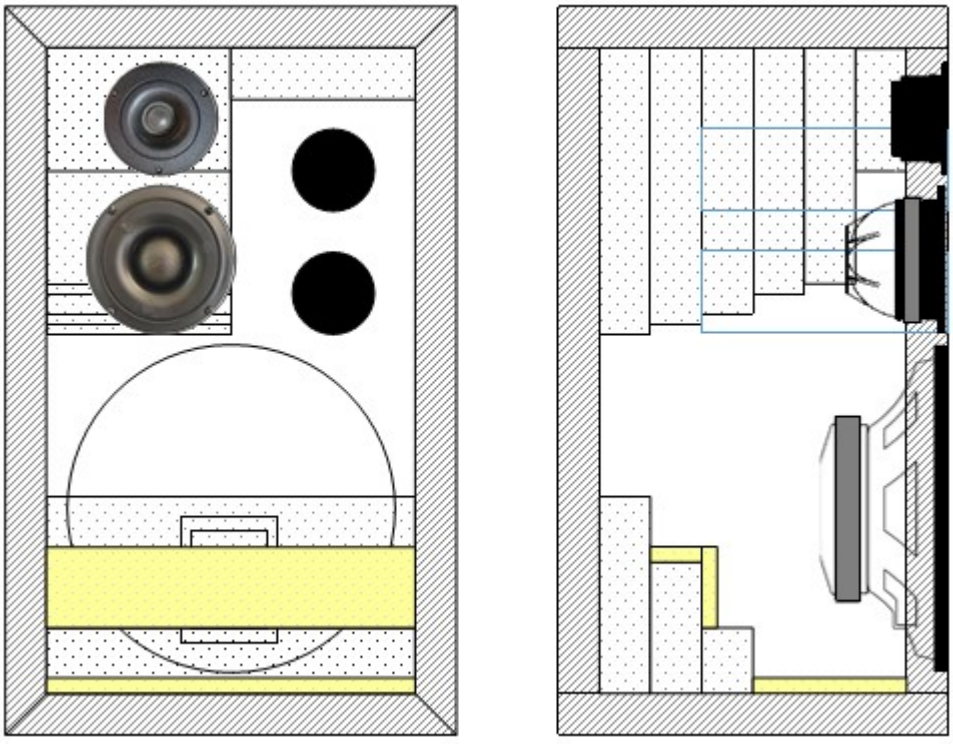






Assorbente acustico

Spessore 1,5 cm



L 12 P 11WK – L 12 P 110K – L 12 P 400K

MODELLO			L 12 P11 WK	L 12 P110K	L 12 P400K
Codice			111.45.021	111.46.001	111.45.019
APPLICAZIONE PRINCIPALE			**Medio basso**	**Medio basso**	**Subwoofer**
Diametro nominale		mm	300	300	300
Impedenza nominale		Ω	8	8	8
Risposta in frequenza		Hz	46-5000	45-3000	34-4000
Potenza nominale Continua rumore IEC (100 ore)		W	350	400	400
Potenza nominale Standard AES		W	450	500	500
Sensibilità (1W/1m)		dB	102	101	94
DATI COSTRUTTIVI					
Diametro bobina mobile		mm	100	100	75
Materiale avvolgimento bobina			Rame	Rame	Rame
Materiale supporto bobina			Kapton	Kapton	Kapton
Densità di flusso		Tesla	1.35	1.38	1.2
Castello			Alluminio	Alluminio	Alluminio
CARATTERISTICHE FISICHE					
Diametro di radiazione	D	m	0.253	0.253	0.241
Massa mobile	Mms	kg	0.035	0.05	0.05
Complianza meccanica	Cms	m/N	0.00037	0.00025	0.00045
Fattore B L		Tesla m	21	23	15.5
PARAMETRI DI SMALL					
Frequenza di risonanza	Fs	Hz	46	45	34
Fattore di merito totale	Qts		0.15	0.13	0.26
Fattore di merito meccanico	Qms		7	4	7
Fattore di merito elettrico	Qes		0.16	0.14	0.25
Volume equivalente d'aria	Vas	m³	0.1	0.09	0.13
Efficienza di riferimento	η_0	%	6	6	1.9
Resistenza della bobina mobile	Re	Ω	6	5.7	6
Superficie di radiazione	Sd	m²	0.0471	0.0471	0.0456
Escursione lineare	Xmax	mm	± 2	± 3.5	± 6
DIMENSIONI E PESO					
Peso netto		kg	10	10	6.3
Diametro totale		mm	312	312	320
Profondità totale		mm	120	120	125
Diametro foro di fissaggio		mm	285	285	285
Numero dei fori di fissaggio			6	8	8
Diametro dei fori di fissaggio		mm	7	7	7
Interasse fori di fissaggio		mm	295	295	295

DYNAUDIO®

TECHNOLOGY UNLIMITED

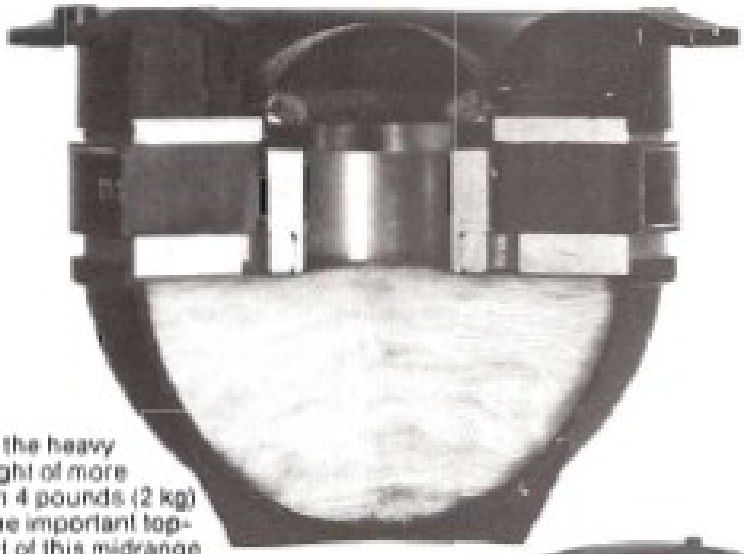
D-54

APPLICATIONS

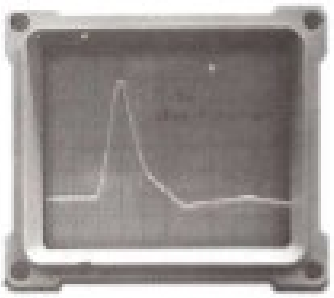
dome midrange for
3-, 4- and 5-way-
systems
HiFi-midrange for
PA and commercial
use

FEATURES

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



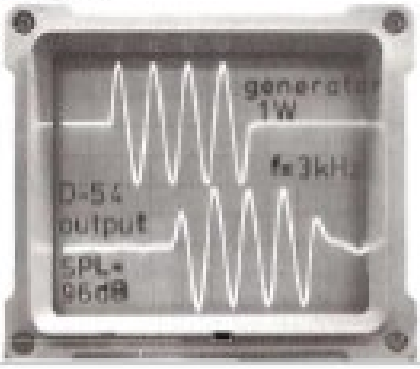
Not the heavy weight of more than 4 pounds (2 kg) is the important top-light of this midrange but the material together with the construction features made this type the most advanced unit: vented voice coil, maximum magnet power with 1200 uWb flux, separately damped back air volume. Not only in top 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.

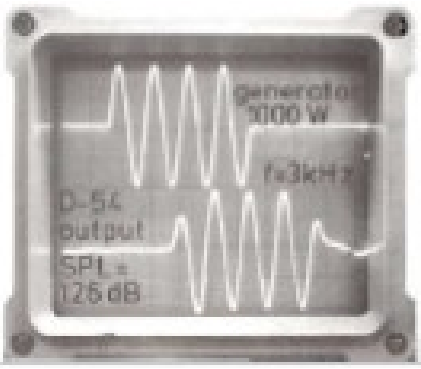


The STEP-FUNCTION of the D-54 is unusual clean. The rise indicates no break, the down slope is close to the ideal of an exponential function. No distortion or overshoot is to be noted.

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 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

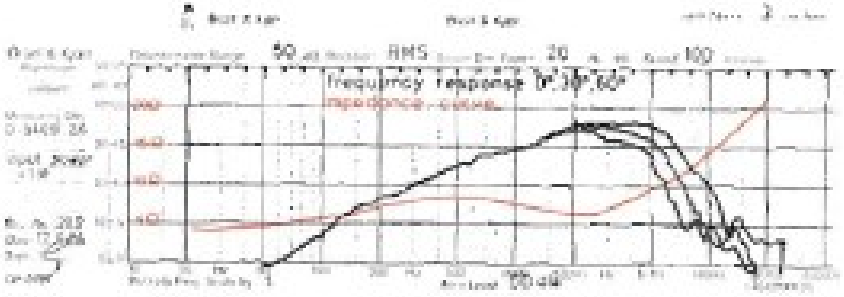
This compression effect is either under-rated or ignored very often. That is why many speakers do not produce SPL's above 100 dB, in spite of higher theoretical specifications. However this test exposes such anomalies between calculations and actual measurements.



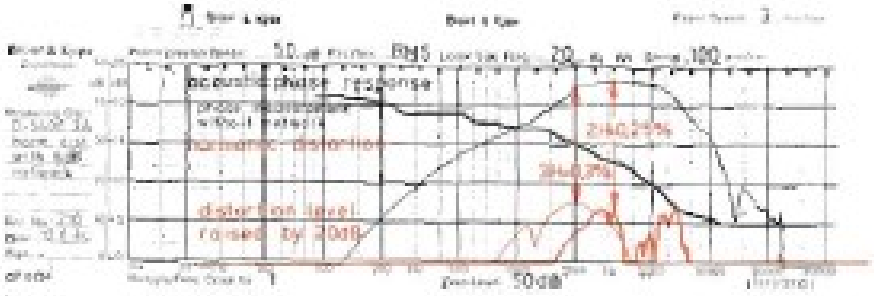


DYNAUDIO®

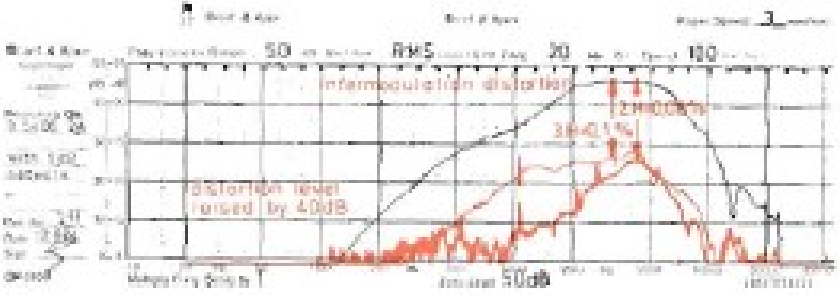
D-54



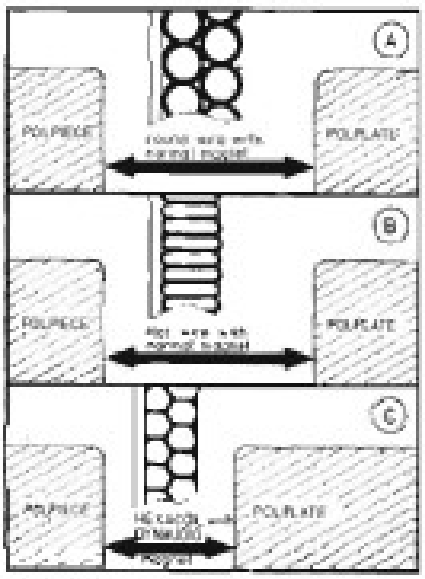
Usable from 800 Hz. Well damped resonance. No impedance peak. Off-axis curves run parallel without jumps.



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.

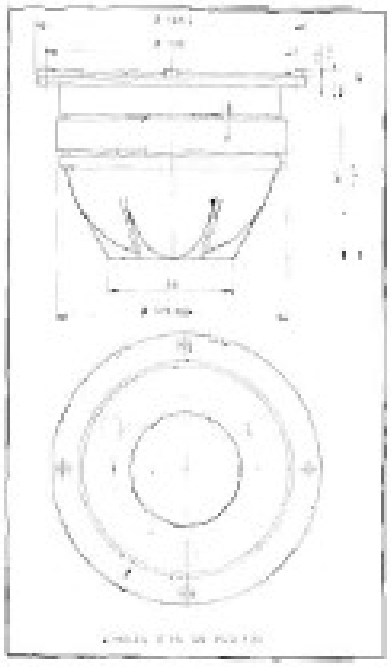
Compliance:			
suspension	C_{MS}	–	
acoustic	C_{AS}	–	
Equivalent volume	V_{AS}	–	
Cone:			
HI cone area	S_D	28	cm^2
moving mass	M_{MS}	2.78	g
Air vol. displacement	V_d	8.4	cm^3
mech. resistance	R_{MS}	–	
lin. excursion P-P	X_{max}	3.0	mm
max. excursion P-P		5.0	mm
*Frequency response:		850 - 20000	Hz
harmonic distortion:		< 0.3%	
intermodulation distortion:		< 0.1%	
Magnet system:			
total gap flux		1200	µWb
flux density		1.65	Tesla
gap energy		710	mWs
force factor	$B \times l$	8.1	Tm
air gap volume	V_g	0.88	cm^3
air gap height		5	mm
air gap width		1.05	mm
Net weight:		1.8	kg

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

Overall dimensions:		145 x 103	mm
*Power handling:			
* nominal	DIN	250	W
* music	DIN	1000	W
transient	10 ms	1000	W
Q-factor:			
mechanical	Q_{MS}	1.09	
electrical	Q_{ES}	0.58	
total	Q_{TS}	0.38	
Resonance frequency free air:	f_S	350	Hz
Sensitivity:	1 W / 1 m	86	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 after 30 hours of running

*Depends on cabinet construction



All specifications subject to change without notice

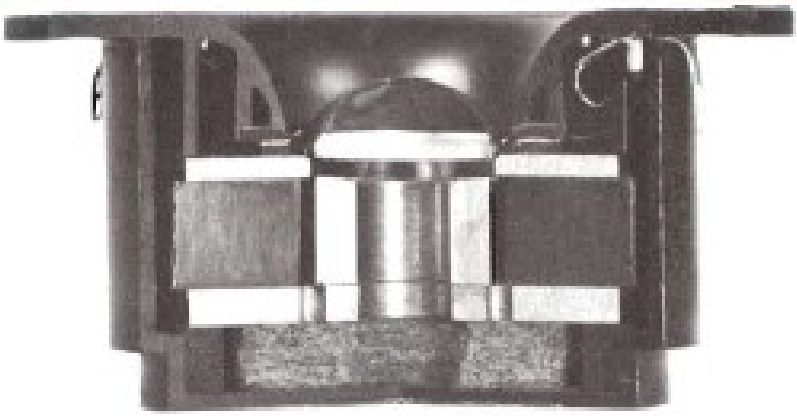
DYNAUDIO®

TECHNOLOGY UNLIMITED

D-28

APPLICATIONS

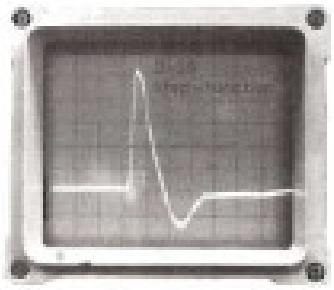
1.1 inch (28 mm) soft dome
tweeter for 2- and 3-way
systems
with supertweeter also
in 4- and 5-way systems
mobile hifi
commercial and PA



FEATURES

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 improvements 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 todays high class high power electronic. The exceptional shape eases the time alignment and improves the efficency without any horn characteristic.

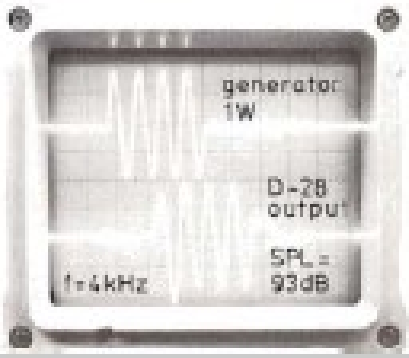


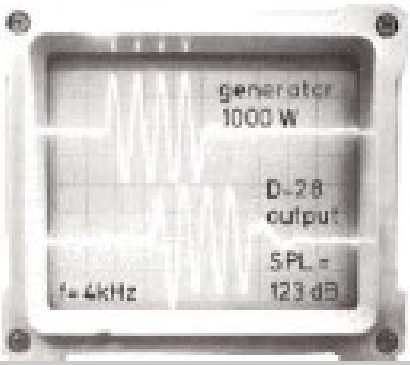
The rise time of a speaker is measured by means of a STEP-FUNCTION. The total is set to be 100 %, then 10 % and 90 % are marked. The first 10 % is the phase of acceleration, the last 10 % is the deceleration phase of the diaphragm. The 80 % between both marks are defined as the movement of the diaphragm. 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 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.

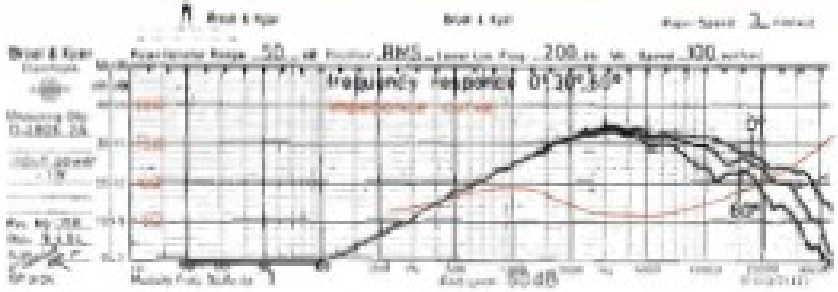
This compression effect is either under-rated or ignored very often. That is why many speakers do not produce SPL's above 100 dB, in spite of higher theoretical specifications. However this test exposes such anomalies between calculations and actual measurements.



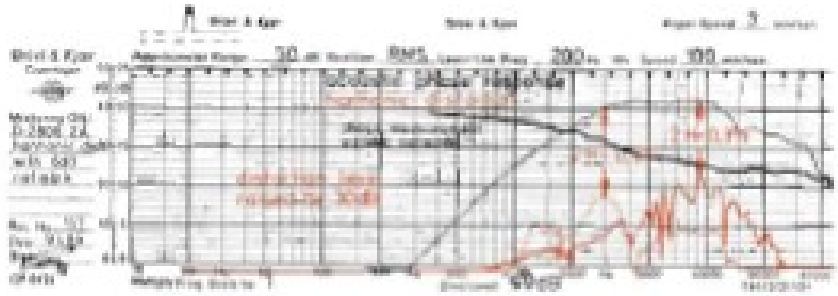


DYNAUDIO®

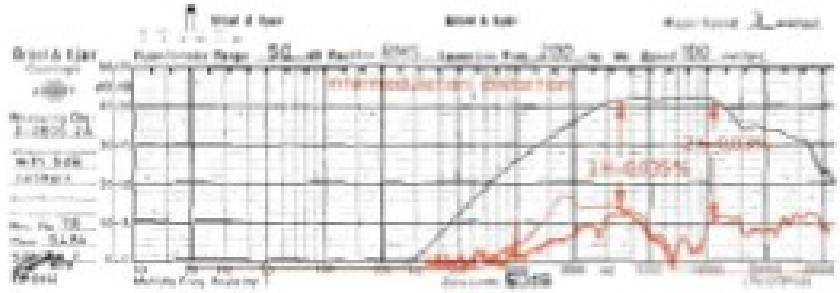
D-28



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



The acoustic phase runs linear up to 50 kHz.



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 materials is (i.e. plastic, aluminum, titanium, beryllium etc.) the more this bending effect is heard and measured as the distortion potential.

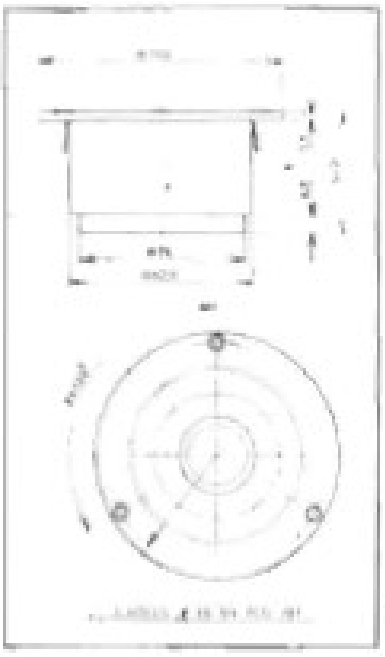
Compliance			
suspension	C_{MS}	-	
enclosure	C_{AS}	-	
equivalent volume	V_{AS}	-	
Cone			
cone area	S_D	8.5	cm^2
moving mass	M_{MS}	0.51	g
air vol. displacement	V_D	6.0	cm^3
mech. resistance	R_{MS}	-	
Xmax excursion P-P	X_{max}	0.7	mm
max. excursion P-P		3.2	mm
* Frequency response		1200 / 25000	Hz
Harmonic distortion		0.5	%
Intermodulation distortion		< 0.025	%
Magnet system			
total gap flux		340	µWb
flux density		1.32	Tesla
gap energy		156	mWs
force factor	$B \times L$	4.2	Tm
air gap volume	V_G	0.16	cm^3
air gap height		2.5	mm
air gap width		0.75	mm
Net weight		0.6	kg

Overall dimensions	Ø	110 x 66	mm
Power handling:			
* nominal	DIN	300	W
* music	DIN	1200	W
sinusoidal	10 ms	1600	W
Q-factor:			
mechanical	Q_{MS}	0.81	
electrical	Q_{ES}	1.11	
total	Q_{TS}	0.39	
Resonance frequency free air	f_S	700	Hz
Sensitivity	1 W / 1 m	93	dB
Voice coil:			
diameter	d	25	mm
length	h	3.2	mm
layers	n	2	
inductance (1 kHz)	L_E	0.09	mH
nom. impedance	Z_{NO}	8	Ω
min. impedance	Z_{MIN}	6.4	Ω
DC resistance	R_E	5.5	Ω

Data given are as after 30 hours of running

* Thiele/Small parameters are measured not statically but dynamically

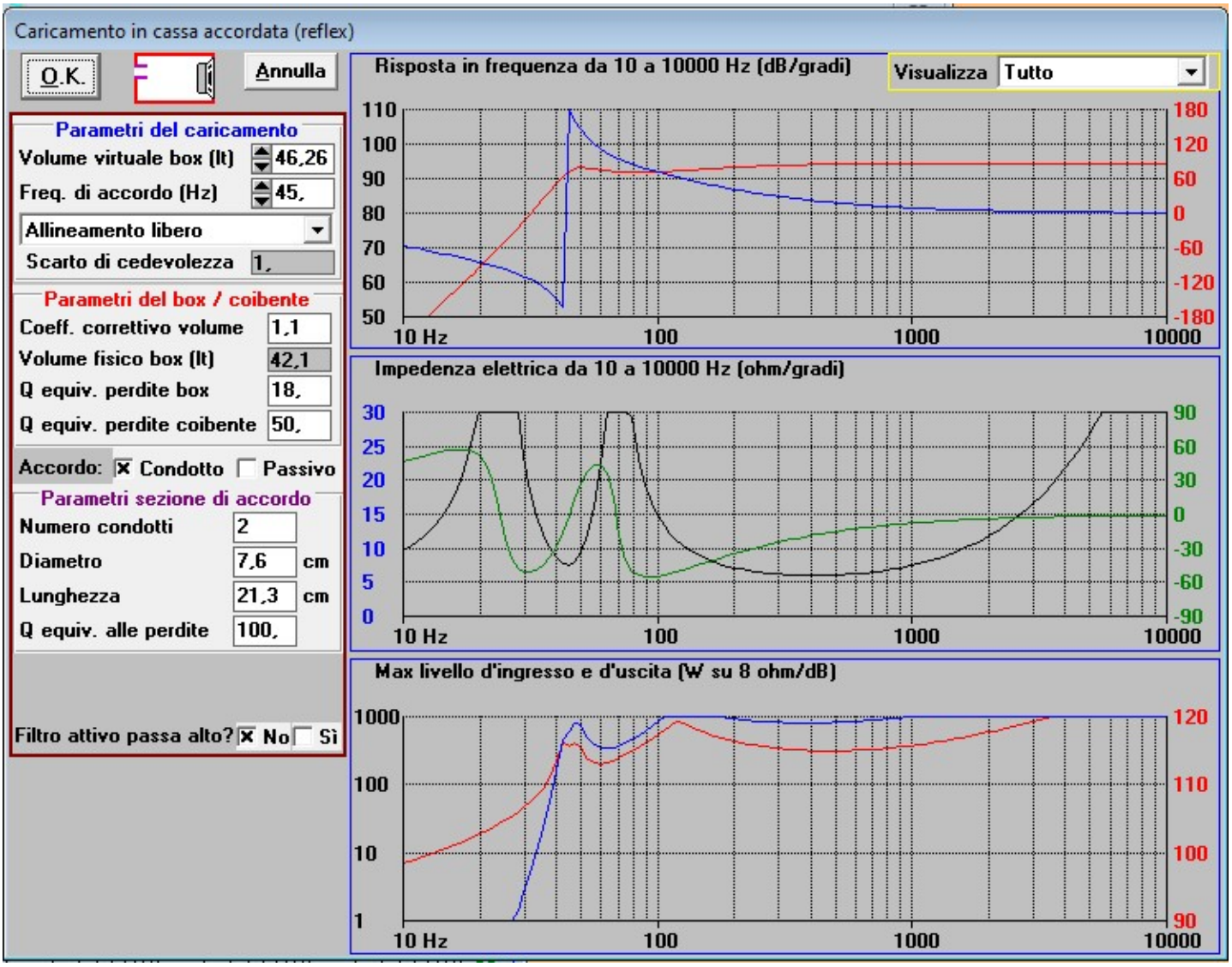
All specifications subject to change without notice

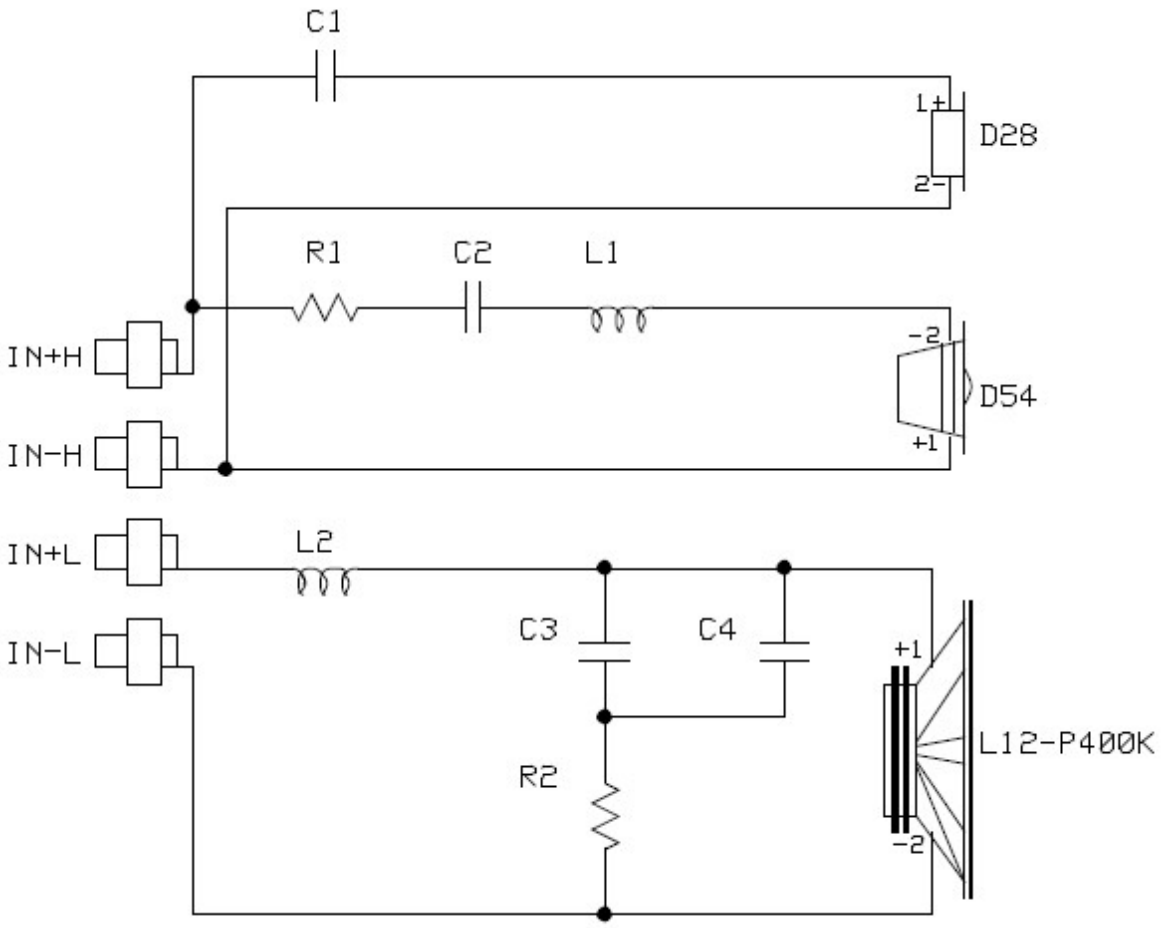


SAS

Parametri di Thiele e Small

Re	5,95	ohm	Vas	67,91	l
Fs	38,	Hz	Mms	76,	gr
Qms	3,		Cms	,23	mm/N
Qes	,26		Xmax	6,	mm
Qts	,24		Vd	,274	l
Sd	456,17	cmq	Rms	6,	kg/s
B x l	20,38	T x m	Le10k	,84	mH
Pressione con 1 watt ad 1 m				93,5	dB
Pressione con 2.83 volt ad 1 m				94,7	dB
Potenza termica massima				400,	W
Efficienza di conversione				1,364	%




C1
1+
D28
2-
R1
C2
L1
IN+H
IN-H
-2
D54
+1
IN+L
L2
IN-L
C3
C4
+1
L12-P400K
R2
-2

Max Input Level (W rms):		Max Output Level (dB/2,83V/1m, 1 diffusore):
110-20000 Hz	600 W	110-20000 Hz >121 dB
42-20000 Hz	400 W	42-20000 Hz 117 dB
35-20000 Hz	90 W	35-20000 Hz 104 dB
30-20000 Hz	45 W	30-20000 Hz 94 dB
20-20000 Hz	20 W	20-20000 Hz 77 dB
Impedenza:	8 ohm	
Risposta in frequenza:		42 - 20000 Hz
Sensibilità:		94 dB
Peso:		43 Kg
Dimensioni:		44 x 71 x 38 cm