



Onken

Driver	=	Eminence Omega Pro 15A		
Vas	=	258.49	litres	9.12 cu.ft.
Fs	=	33.00	Hz	
Dia	=	37.00	cm	14.57 in.
Xmax	=	4.80	mm	0.19 in.
Re	=	5.28		dc resistance of driver
Qms	=	5.69		mechanical Q of the driver
Qes	=	0.33		electrical Q of the driver
Qts	=	0.31		
Mms/d	=	92		total cone assembly mass
Sd	=	0.0856		effective radiation area of the driver cone
Rg	=	0.75		total components resistance (xover coil, terminal, wire, amplifier, etc.)
n	=	6.34		Onken alignment (best alignment = 5.7, Onken alignment = 6.34)
				note : you can play with the n factor to maintain the L' vent under 35 cm

Vb'	=	150.0	litres	5.30 cu.ft.
Qb'	=	0.71		
Np	=	2		
Dv	=	12.5	cm	4.92 in.

			Vr	Fb	F3l	Qb	Lr		Pk	
			litres	cu.ft	Hz	Hz		cm	in.	dB
Sealed Desired	=	150.0	5.30	54.5	81.2	0.51	- sealed -			
Sealed Opt	=	62.5	2.21	74.8	74.8	0.71	- sealed -			
Ported Opt	=	110.6	3.90	42.9	47.9	0.57	27.0	10.6	0.05	
Ported Desired	=	150.0	5.30	39.1	41.9	0.51	23.0	9.1	-0.74	

Box and system response

F-3	37.08	Hz	box cutoff frequency at -3dB
Fb	36.41	Hz	box cutoff frequency
Map	13.06		acoustical mass box
S vent	404.80	cm^2	this value is calculated by the vent dimension section
Desired S	642.23	cm^2	equal to 0.75*Sd
dB 1w/1m	95.18	dB	total efficiency of the system including Rg

Vent lenght

L vent	40.899	cm	effective lenght vent
L' vent	29.662	cm	corrected effective vent lenght (use this lenght in your vent calculation)
			note : If the L' vent is over 35 cm, your driver is not suitable for the Onken speaker application

Vent dimension (habitually an Onken speaker have a S vent equal or -15 % smaller to the driver Sd)

Width	2.300	cm	indicate the width of one vent
Height	22.000	cm	indicate the height of one vent
Quantity	8.000		indicate the number of vents you will use (typically 6 or 8)
S vent	404.800	cm^2	total vent area (try to obtain an S vent that is equal to or no less than 75% of Sd)
Vent volume	12.007	litres	total vent volume

Total Box Volume

Vb	204.752	litres	total internal volume of the box
Vb Total	216.760	litres	total internal volume of the box plus the required volume for the vent

	Golden Ratio	1.61803	Width	Height	Depth
Onken Box	=	204.75	58.94	95.37	36.43
Sealed Opt	=	62.47	39.68	64.20	24.52
Port Opt	=	110.61	48.00	77.67	29.67
Desired Vb	=	150.00	53.13	85.97	32.84