



<b>Driver</b>	=	<b>Eminence Omega Pro 15A</b>	
<b>Vas</b>	=	258.49	litres 9.12 cu.ft.
<b>Fs</b>	=	33.00	Hz
<b>Dia</b>	=	37.00	cm 14.57 in.
<b>Xmax</b>	=	4.80	mm 0.19 in.
<b>Re</b>	=	5.28	dc resistance of driver
<b>Qms</b>	=	5.69	mechanical Q of the driver
<b>Qes</b>	=	0.33	electrical Q of the driver
<b>Qts</b>	=	0.31	
<b>Mms/d</b>	=	92	total cone assembly mass
<b>Sd</b>	=	0.0856	effective radiation area of the driver cone
<b>Rg</b>	=	0.75	total components resistance (xover coil, terminal, wire, amplifier, etc.)
<b>n</b>	=	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

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

	<b>Vr</b>		<b>Fb</b>	<b>F3l</b>	<b>Qb</b>	<b>Lr</b>		<b>Pk</b>	
	litres	cu.ft	Hz	Hz		cm	in.	dB	
<b>Sealed Desired</b>	=	150.0	5.30	54.5	81.2	0.51	- sealed -		
<b>Sealed Opt</b>	=	62.5	2.21	74.8	74.8	0.71	- sealed -		
<b>Ported Opt</b>	=	110.6	3.90	42.9	47.9	0.57	27.0	10.6	0.05
<b>Ported Desired</b>	=	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 <sup>2</sup>	this value is calculated by the vent dimension section
Desired S	642.23	cm <sup>2</sup>	equal to 0.75*Sd
dB 1w/1m	95.18	dB	total efficiency of the system including Rg

#### Vent length

L vent	40.899	cm	effective length vent
L' vent	29.662	cm	corrected effective vent length (use this length 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 <sup>2</sup>	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

		<b>Width</b>	<b>Height</b>	<b>Depth</b>	
<b>Onken Box</b>	=	204.75	58.94	95.37	36.43
<b>Sealed Opt</b>	=	62.47	39.68	64.20	24.52
<b>Port Opt</b>	=	110.61	48.00	77.67	29.67
<b>Desired Vb</b>	=	150.00	53.13	85.97	32.84

**Onken**