

# Onken

Driver	=	Sonido SWR-300	
Vas	=	215.13 litres	7.59 cu.ft.
Fs	=	35.00 Hz	
Dia	=	30.00 cm	11.81 in.
Xmax	=	1.60 mm	0.06 in.
Re	=	7.00	dc resistance of driver
Qms	=	2.57	mechanical Q of the driver
Qes	=	0.44	electrical Q of the driver
Qts	=	0.38	
Mms/d	=	28	total cone assembly mass
Sd	=	0.0452	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 30 cm but try to don't used a excessive value because you don' t respect the Onken approach
Vb'	=	240.0 litres	8.47 cu.ft.
Qb'	=	0.71	
Np	=	2	
Dv	=	10.2 cm	4.00 in.

	Vr	Fb	F3l	Qb	Lr	Pk
	litres cu.ft	Hz	Hz		cm in.	dB
Sealed Desired	240.0 8.47	48.2	70.8	0.52	- sealed -	
Sealed Opt	86.0 3.04	65.5	65.5	0.71	- sealed -	
Ported Opt	173.4 6.12	37.4	38.5	0.57	12.6 5.0	0.07
Ported Desired	240.0 8.47	33.8	33.4	0.52	10.3 4.0	-0.78

## Box and system response

F-3	33.75 Hz	box cutoff frequency at -3dB
Fb	33.14 Hz	box cutoff frequency
Map	13.95	acoustical mass box
S vent	404.80 cm <sup>2</sup>	<b>this value is calculated by the vent dimension section</b>
Desired S	339.00 cm <sup>2</sup>	equal to 0.75*Sd
dB 1w/1m	94.14 dB	total efficiency of the system including Rg

## Vent lenght

L vent	43.687 cm	effective lenght vent
L' vent	32.449 cm	corrected effective vent lenght (use this lenght in your vent calculation) <i>note : If the L' vent is over 35 cm, your driver is not suitable for the Onken speaker application</i>

## 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 vent you can use (Onken speaker have 6 or 8 identical vent)
S vent	404.800 cm <sup>2</sup>	total vent area (try to obtain a S vent equal or maximum 15% less to the Sd)
Vent volum	13.136 litres	total volume occupied by all vent in the box

## Total Box Volume

Vb	231.368 litres	total internal volume of the box
Vb Total	244.503 litres	total internal volume of the box plus the required volume for the vent

## Golden Ratio

1.61803

Onken Box		Width	Height	Depth
Sealed Opt	= 231.37	61.39	99.33	37.94
Port Opt	= 86.03	44.14	71.43	27.28
Desired Vb	= 173.36	55.76	90.22	34.46
	= 240.00	62.14	100.55	38.41