

ONKEN CALCULATOR by Cyr-Marc Debien 2000 © cdebien@cmaisonneuve.com				
After original research from M. Eiji Koizumi and Jacques Mahul and Jean Hiraga calculations				
Koizumi factor	K=	1,57	K=	50,844 Hz
You can modify the RED value. The Green Value are calculated by the software. In many case it's for vent				
TS parameters				
Fs	32,385	Hz	driver frequency resonance	
Re	6,800	ohms	dc resistance of driver	
Qms	7,820		mechanical Q of the driver	
Qes	0,325		electrical Q of the driver	
Qts	0,312		total Q of driver at Fs calculated by the software	
Mms/d	30,765	gr	total cone assembly mass	
Sd	5,100E-02	m ²	effective radiation area of the driver cone	
Rg	0,300	ohms	total components resistance (xover coil, terminal, wire, amp	
Cms	7,85E-04		driver suspension compliance calculated by the software	
Vas	285,953	litres	air volume driver compliance calculated by the software	
Vas*Qts ²	30,246		calculated by the software	
n =	5,700	(best 5.7)	Onken alignment (best alignment = 5.7, Onken alignment =	
			note : you can play with the n factor to maintain the L' vent u	
			but try to don't used a excessive value because you don't re	
Box and system response				
F-3	41,708	Hz	box cutoff frequency at -3dB	
Fb	38,835	Hz	box cutoff frequency	
Cab	12,314		acoustical box compliance	
Map	13,639		acoustical mass box	
S vent	422,400	cm ²	this value is calculated by the vent dimension section	
nO	0,029			
dB 1w/1m	96,220	dB	total efficiency of the system including Rg	
Vent lenght				
L vent	44,556	cm	effective lenght vent	
L' vent	33,077	cm	corrected effective vent lenght (use this lenght in your vent c	
			note : If the L' vent is over 35 cm, your driver is not suitable	
Vent dimension (habitually an Onken speaker have a S vent equal or -15 % smaller to the				
Width	3,300	cm	indicate the width of one vent	
Height	16,000	cm	indicate the height of one vent	
Quantity	8,000		indicate the number of vent you can use (Onken speaker ha	
S vent	422,400	cm ²	total vent area (try to obtain a S vent equal or maximum 15%	

Vent volume	13,972	litres	total volume occupied by all vent in the box		
Total Box Volume					
Vb	172,400	litres	total internal volume of the box		
Vb Total	186,372	litres	total internal volume of the box plus the required volume for		

the vent		