ONKEN CALCULATOR by Cyr-Marc Debien 2000 © cdebien@cmaisonneuve.

After original research from M. Eijiro Koïzumi and Jacques Mahul and Jean Hiraga ca

Koïzumi facto		K=	1.57	K=	62.800	Hz	

You can modify the RED value. The Green Value are calculated by the software. In many case it's for va

TS parameters

Fs	40.000	Hz	driver frequency resonnance
Re	6.500	ohms	dc resistance of driver
Qms	7.100		mechanical Q of the driver
Qes	0.380		electrical Q of the driver
Qts	0.361		total Q of driver at Fs calculated by the software
Mms/d	84.150	gr	total cone assembly mass
Sd	8.550E-02	m^2	effective radiation area of the driver cone
Rg	0.100	ohms	total components resistance (xover coil, terminal, wire, ampl
Cms	1.88E-04		driver suspension compliance calculated by the software
Vas	192.600	litres	air volume driver compliance calculated by the software
Vas*Qts2	25.794		calculated by the software
n =	6.340	(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	43.409	Hz	box cutoff frequency at -3dB
Fb	42.628	Hz	box cutoff frequency
Cab	11.681		acoustical box compliance
Map	11.934		acoustical mass box
S vent	512.000	cm^2	**this value is calculated by the vent dimension section**
nO	0.031		
dB 1w/1m	96.819	dB	total efficiency of the system including Rg

Vent lenght

L vent	47.255	cm	effective lenght vent
L' vent	34.617	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	6.400	cm	indicate the width of one vent

Height	10.000	cm	indicate the height of one vent		
Quantity	8.000		indicate the number of vent you can use (Onken speaker ha		
S vent	512.000	cm^2	total vent area (try to obtain a S vent equal or maximum 15%		
Vent volume	17.724	litres	total volume occupied by all vent in the box		
Total Box Volume					
Vb	163.534	litres	total internal volume of the box		
Vb Total	181.258	litres	total internal volume of the box plus the required volume for		

lidation.		
fier, etc.)		
6.34)		
nder 30 cm		
spect the Onken approach		
alculation)		
for the Onken speaker application		

ve 6 or 8 identical vent)		
less to the Sd)		
the vent		