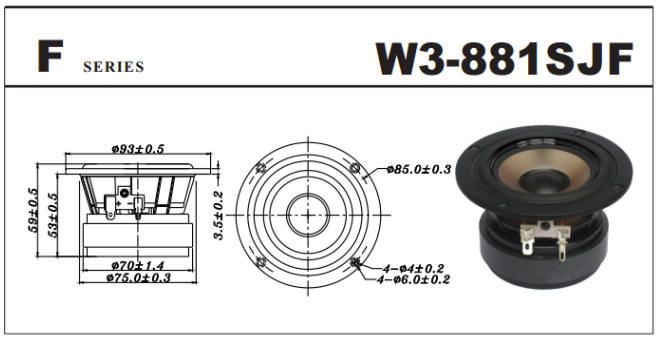
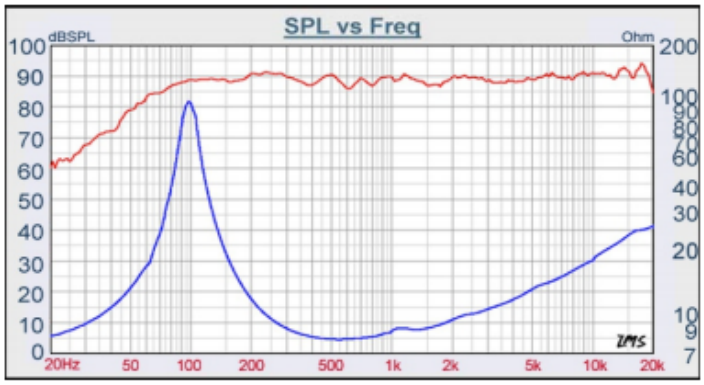
TABAQ for Tang Band W3-881SJF

© Bjorn Johannesen 2016 bjornarnejohannesen@gmail.com

Software by Martin J. King www.quarter-wave.com



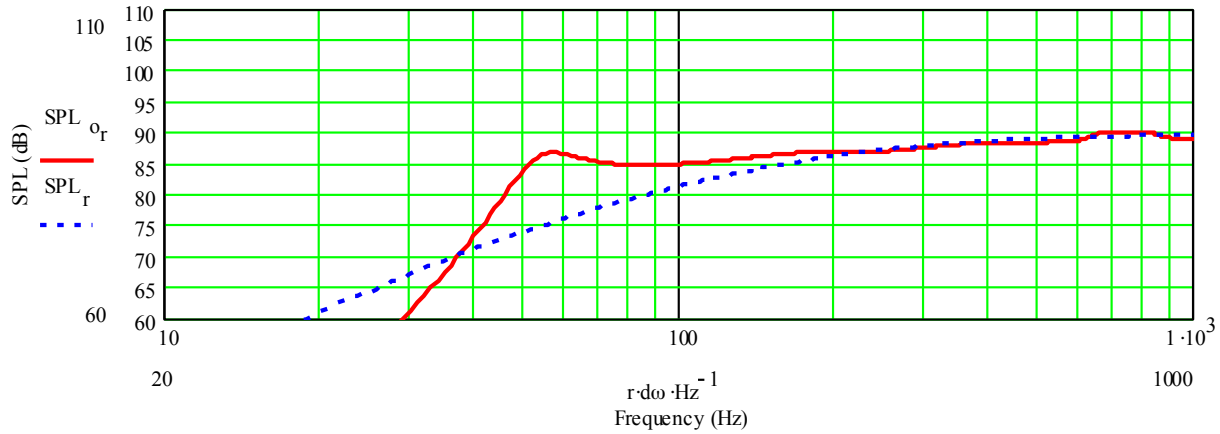


DIAPHRAGM MTL	Natural color PPM
SURROUND MTL	Santoprene
NOMINAL IMPEDANCE	8 Ω
DCR IMPEDANCE	6.6 Ω
SENSITIVITY 1W/1m	88 dB
FREQUENCY RESPONSE	100 - 20K Hz
FREE AIR RESONANCE	100 Hz
VOICE COIL DIAMETER	20.4 mm
AIR GAP HEIGHT	6.0 mm
RATED POWER INPUT	15 W
MAXIMUM POWER INPUT	30 W
FORCE FACTOR, BL	4.47 TM
TYPE OF MAGNET	Ferrite
MOVING MASS	2.0 g
FERROFLUID ENHANCED	No
SUSPENSION COMPLIANCE	1302 uMN^{-1}
EFFECTIVE PISTON AREA	0.0032 M^2
Levc	0.081 mH
Zo	110 Ω
X-max	0.5 mm
Vas	1.89 Litr
Qts	0.39
Qms	6.44
Qes	0.41

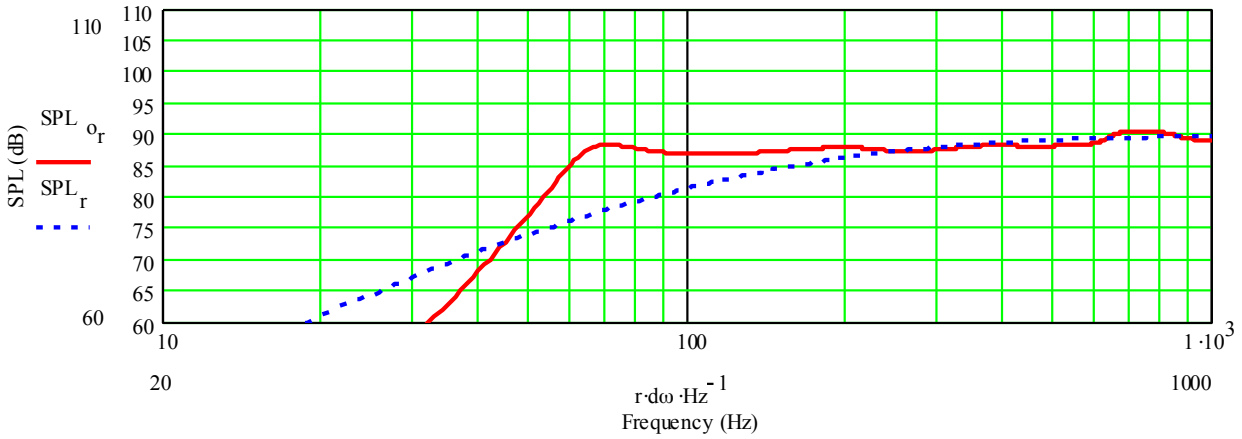
The driver has a relatively low Qts for a quarter wave, and the tuning of the cabinet is therefore set a few Hz higher than the original TABAQ. Adjusting the opening does this. The stuffing is set lighter.

I have not heard this driver, so please be open regarding experimenting with stuffing and baffle step correction.

W3-881SJF in traditional TABAQ

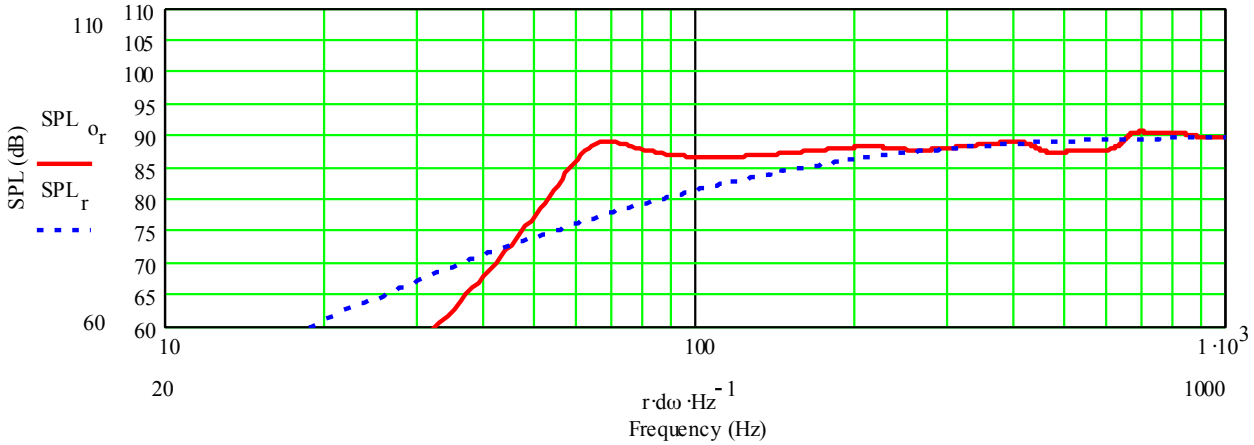


Port length reduced to 2 Inch (5.1 cm)



By reducing the port length, the tuning of the enclosure will raise. This adjustment will give you a better result. There is more output from 200 Hz and below.

2 port inch and stuffing reduced to 70 gram



I would reduce the stuffing from the normal 100 gram to 70 gram. Yes, there are some tipples in the higher frequencies but I would not bother with these.

The area around 60 Hz has a bump, but this is something you probably will not see in the final build.

I have not build this version myself, so I cannot verify my recommendation. However, you can always adjust stuffing to your personal taste.

Baffle Step Circuit

In general a filter to compensate for baffle step is recommended, but this depends on the placement of the speaker, your listening distance, general sound of the driver and of course your personal taste. I would recommend you tried baffle step circuit. This could be in an external box, which could easily be plugged in one of the cables to the speaker. Or be removed.

The circuit is 3.9 resistor in parallel with a 1.0 mH coil. You might experiment with resistors up to 6.8 ohm.

To build TABAQ

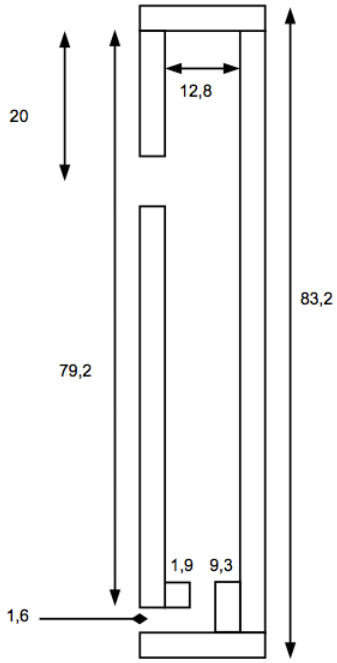
12 mm in the following sizes – all measures are in cm:

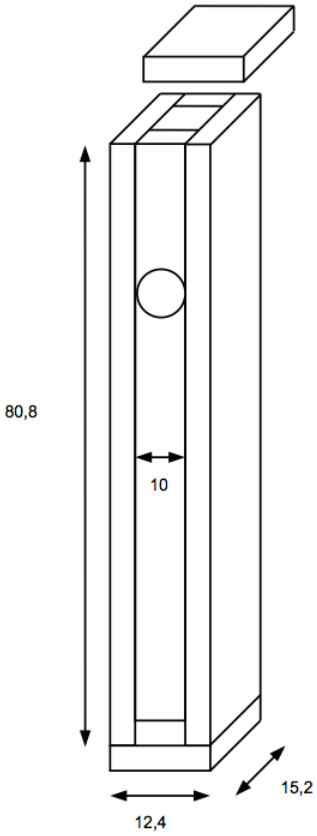
12.4 x 15.2	2 pcs	Top and Bottom
79.2 x 10.0	1 pcs	Front
80.8 x 10.0	1 pcs	Back
80.8 x 15.2	2 pcs	Side
1.9 x 10.0	1 pcs	Opening
9.3 x 10.0 x 2.8	1 pcs	Back wall at the opening

Stuffing: 70 gram (might be increased to 100 gram) in the upper ⅔ of the cabinet

Optional Filter: 1 resistor 3.9 Ω and 1 inductor 1.0 mH. These are in parallel and connected in the cable to the + connector of the driver.

Driver is 20 cm from the closed end – measured internally.


20
12,8
83,2
79,2
1,9
9,3
1,6


80,8
10
15,2
12,4