

elodis subwoofer

MEASUREMENT DATA

ELODIS-SUB-VB21L

Date: March 09, 2008 by Franz Hinterlehner

Measurement devices:

Software: Arta, Steps, Limp

Micro: Earthworks M30

Soundcard: Tascam US 122-L

Power Amplifier: Crown K2, Marantz MA700

Room correction system: Tact RCS 2.2

Elodis-Sub-VB21L

Frequency response

by using different low-pass filters
no equalizing and no high-pass filters were used

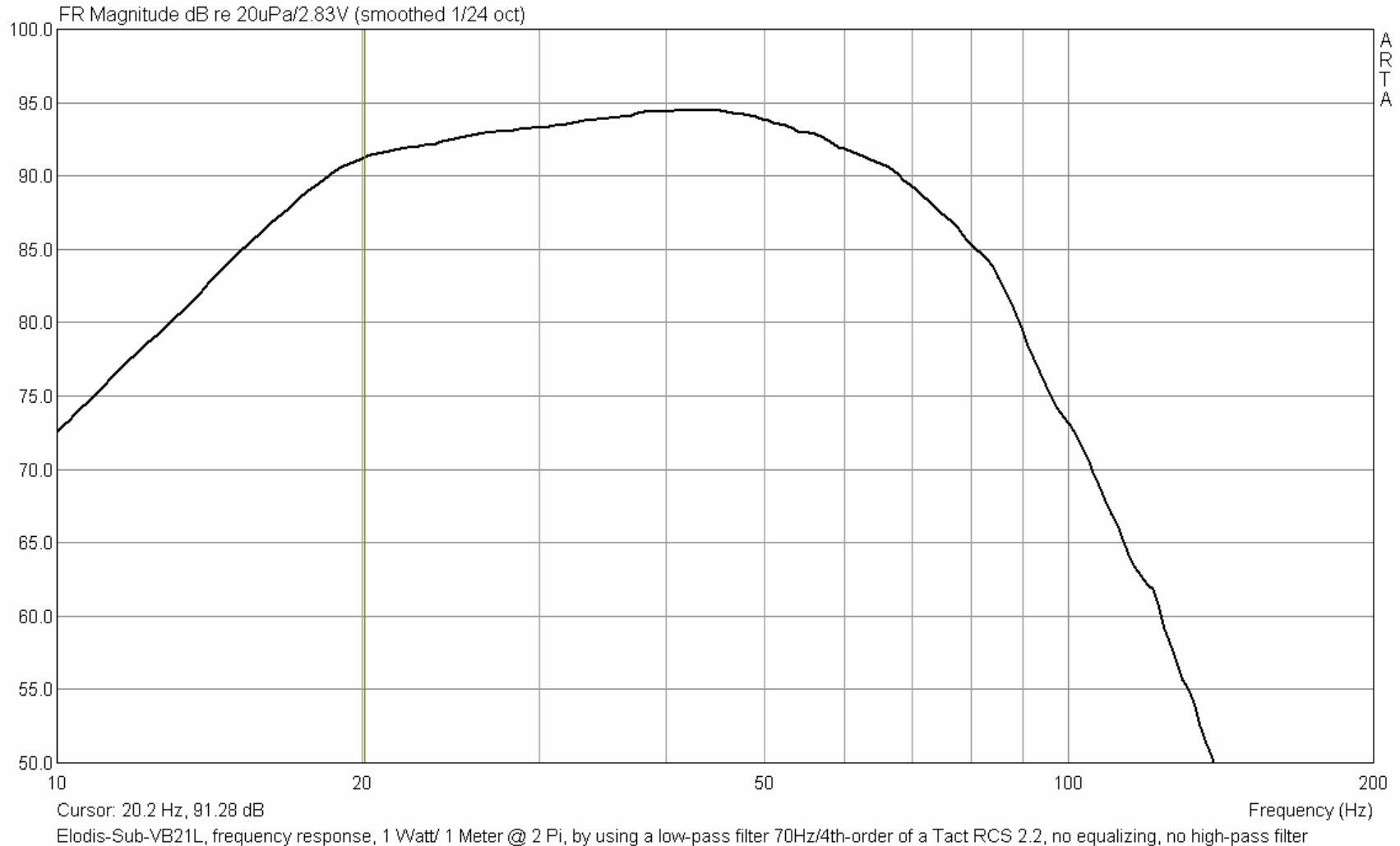
**Moderate equalizing down to 20 Hz
depending on room conditions
by using high quality ROOM-CORRECTION-PROCESSORS
or other high quality LOUDSPEAKER MANAGEMENT SYSTEMS
is highly recommendable.**

The following frequency response measurements are made by using a
TACT RCS 2.2 Room Correction System

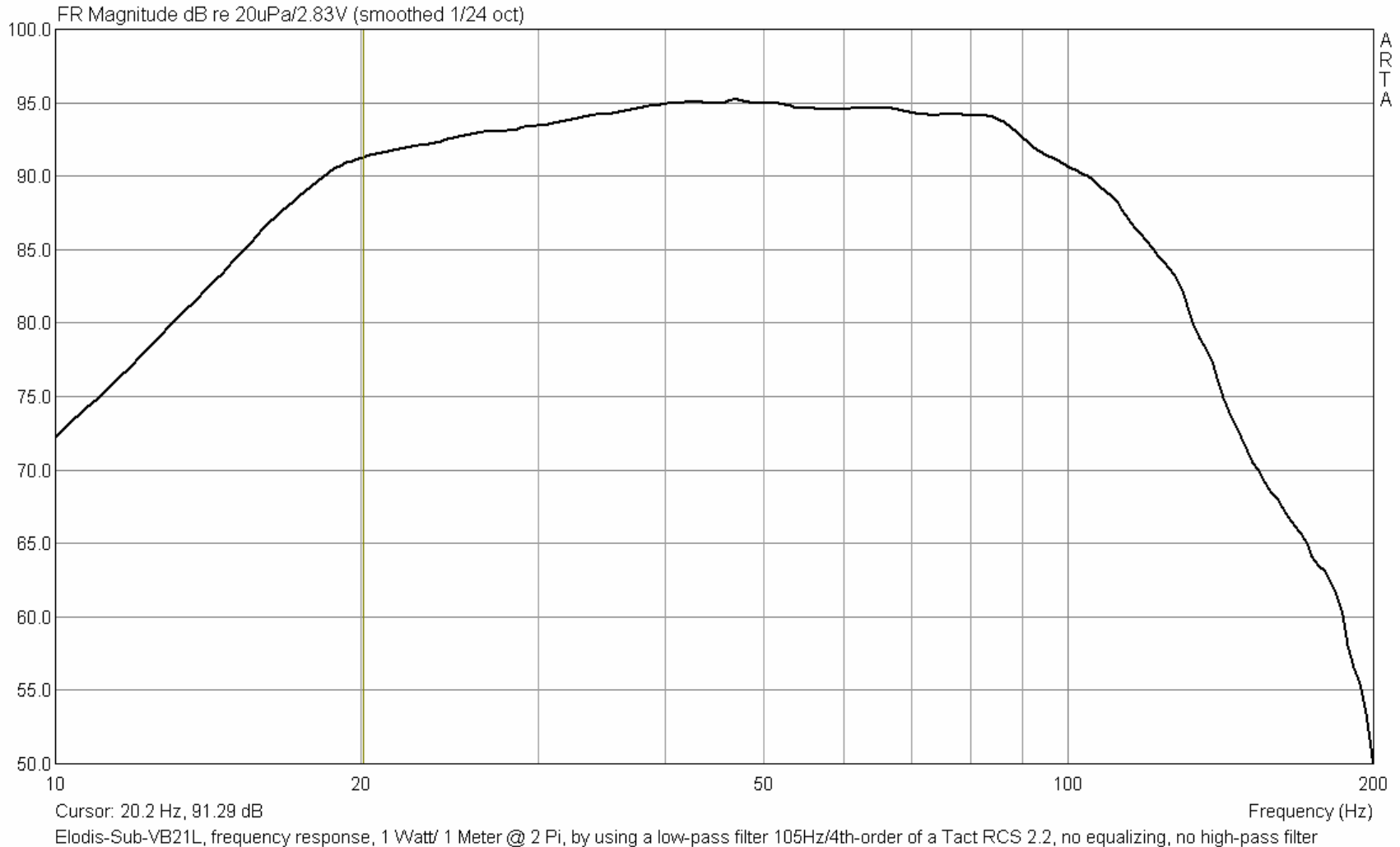
The slightly falling frequency response below 50 Hz harmonizes very
well with a wall/floor junction placement when no equalizing is
preferred.

**To protect the speaker from mechanical destruction below 20 Hz
a fitted subsonic filter (high-pass filter) must be used!**

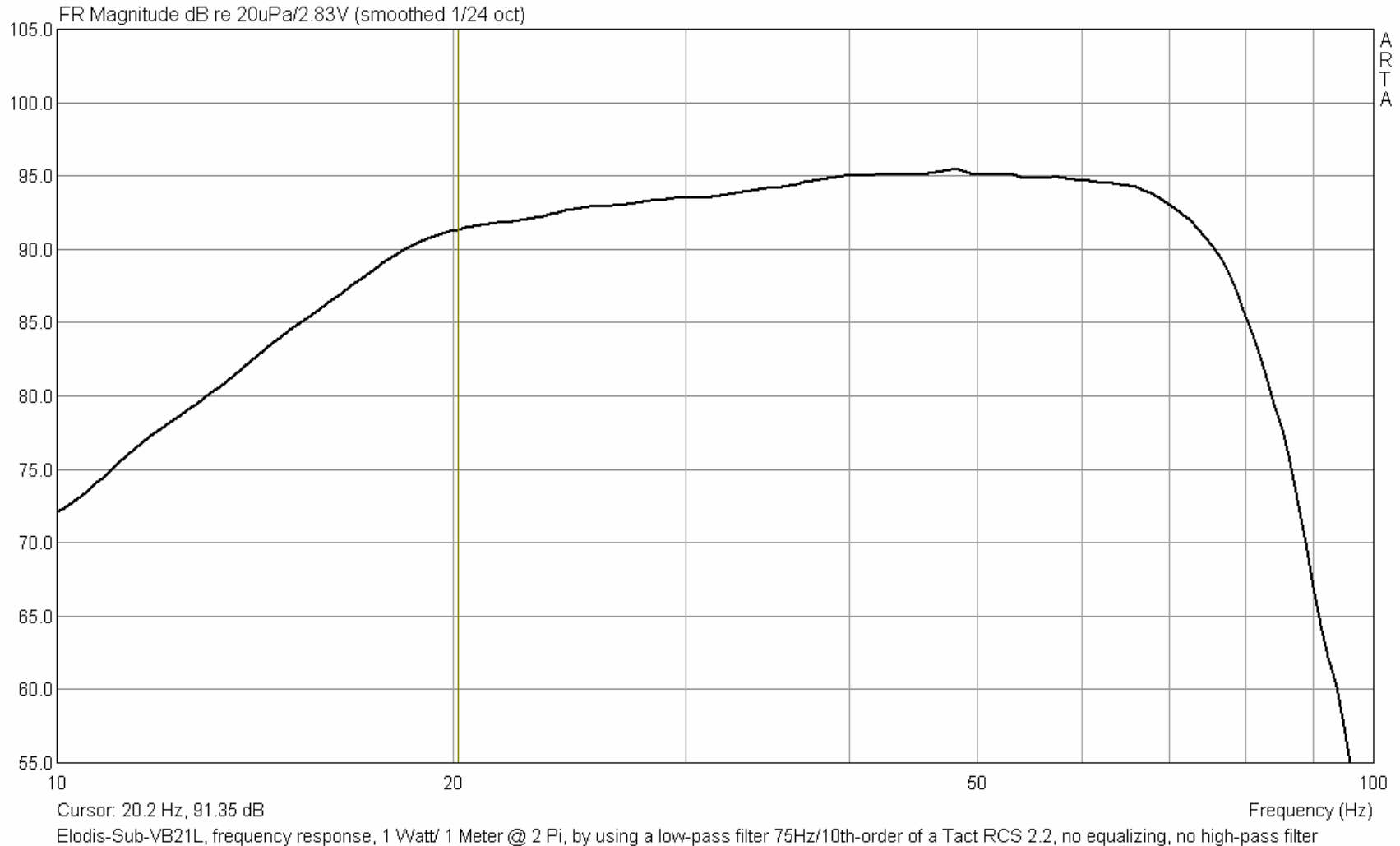
Elodis-Sub-VB21L, frequency response, 2.83 Volts/1 Meter, 2 Pi,
by using a low-pass filter 70Hz/4th-order of a Tact RCS 2.2,
no equalizing, no high-pass filter



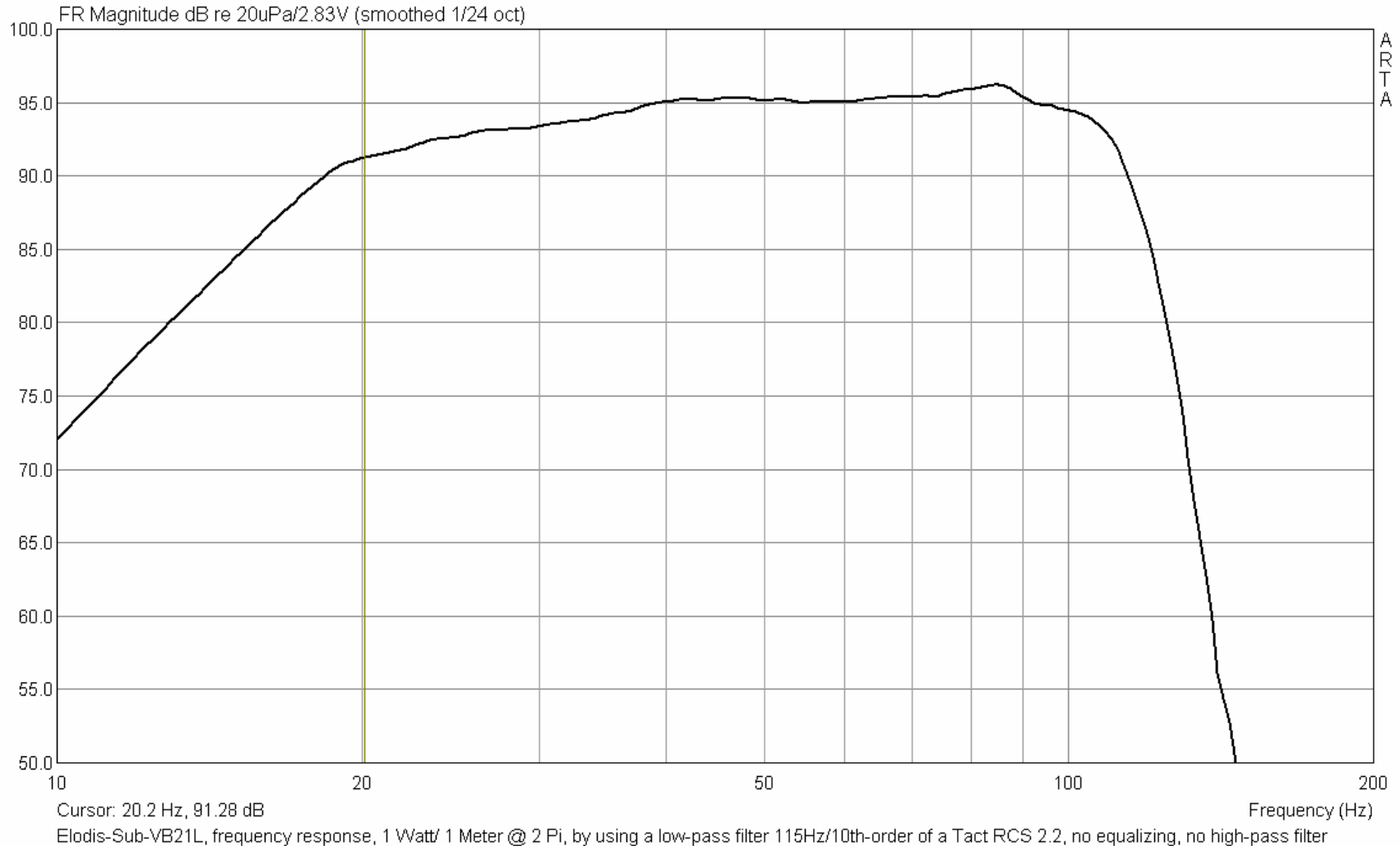
Elodis-Sub-VB21L, frequency response, 2.83 Volts/1 Meter, 2 Pi,
by using a low-pass filter 105Hz/4th-order of a Tact RCS 2.2,
no equalizing, no high-pass filter



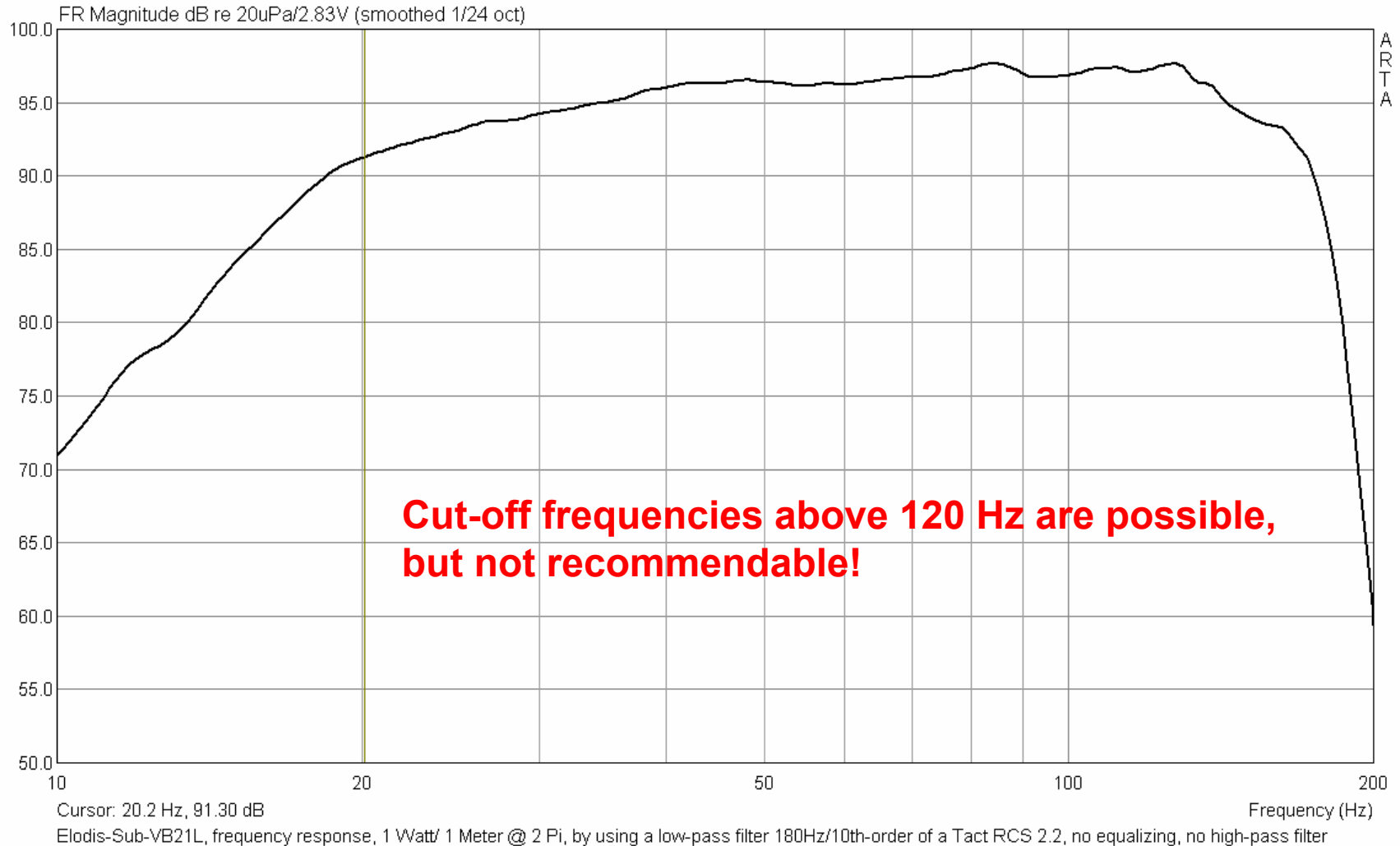
Elodis-Sub-VB21L, frequency response, 2.83 Volts/1 Meter, 2 Pi, by using a low-pass filter 75Hz/10th-order of a Tact RCS 2.2, no equalizing, no high-pass filter



Elodis-Sub-VB21L, frequency response, 2.83 Volts/1 Meter, 2 Pi,
by using a low-pass filter 115Hz/10th-order of a Tact RCS 2.2,
no equalizing, no high-pass filter



Elodis-Sub-VB21L, frequency response, 2.83 Volts/1 Meter, 2 Pi,
by using a low-pass filter 180Hz/10th-order of a Tact RCS 2.2,
no equalizing, no high-pass filter



Elodis-Sub-VB21L

Harmonic distortion

Measurement Setup



Measurement System

Single channel - Level

Response channel

Left

Sampling frequency (Hz)

48000

Min. integration time (ms)

300

Transient time (ms)

300

I/O delay (ms)

0

Intra burst pause (ms)

300

Stepped Sine Generator

Start frequency (Hz)

20.00

Stop frequency (Hz)

100.00

Frequency increment

1/24 octave

Generator level (dB re FS)

-3

Test frequency (Hz)

1000

L		-70		-50		-30		-10	dB
R	-80		-60		-40		-20		dB

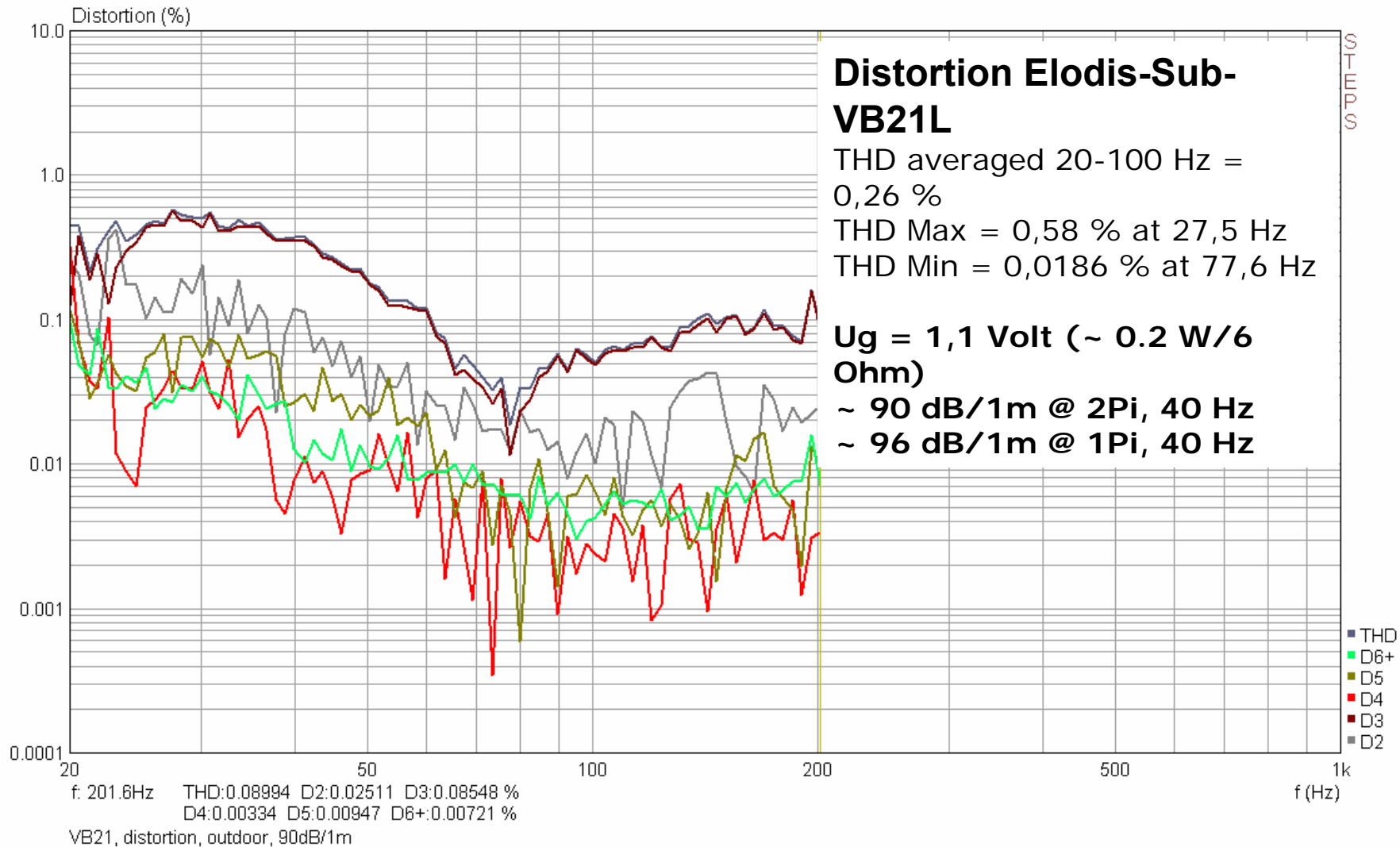
Generate

Default

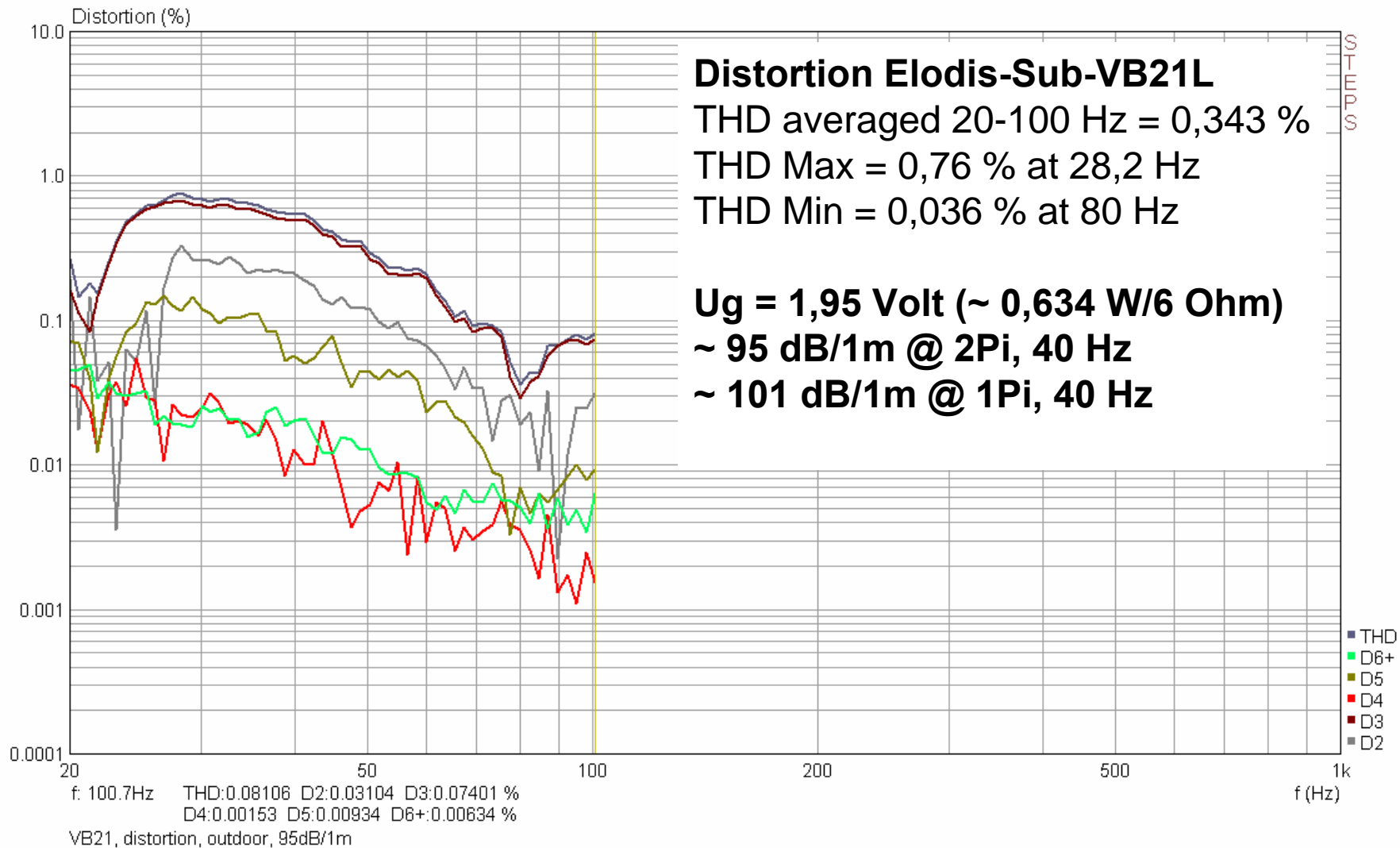
Cancel

OK

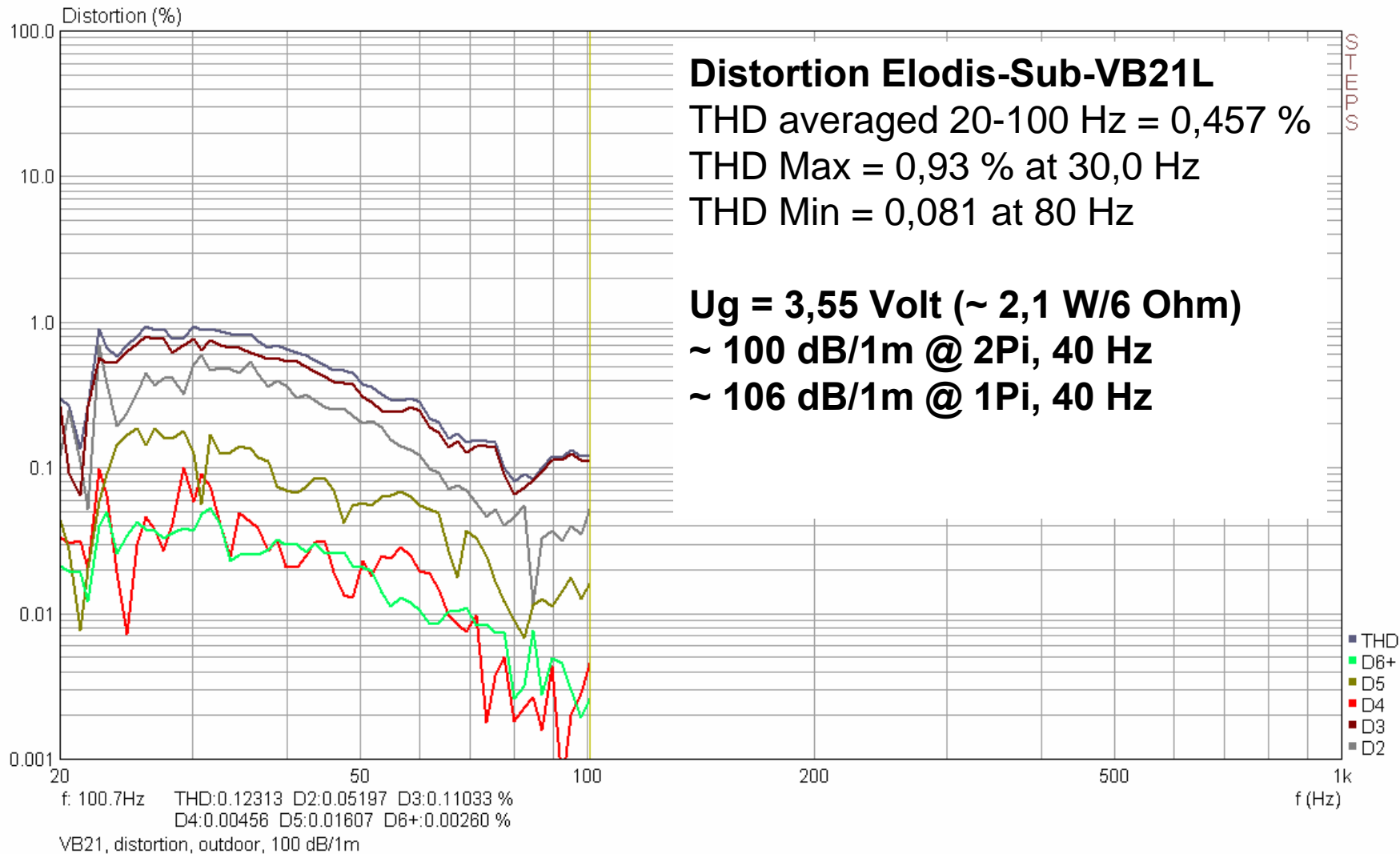
Distortion Elodis-Sub-VB21L, without filter networks



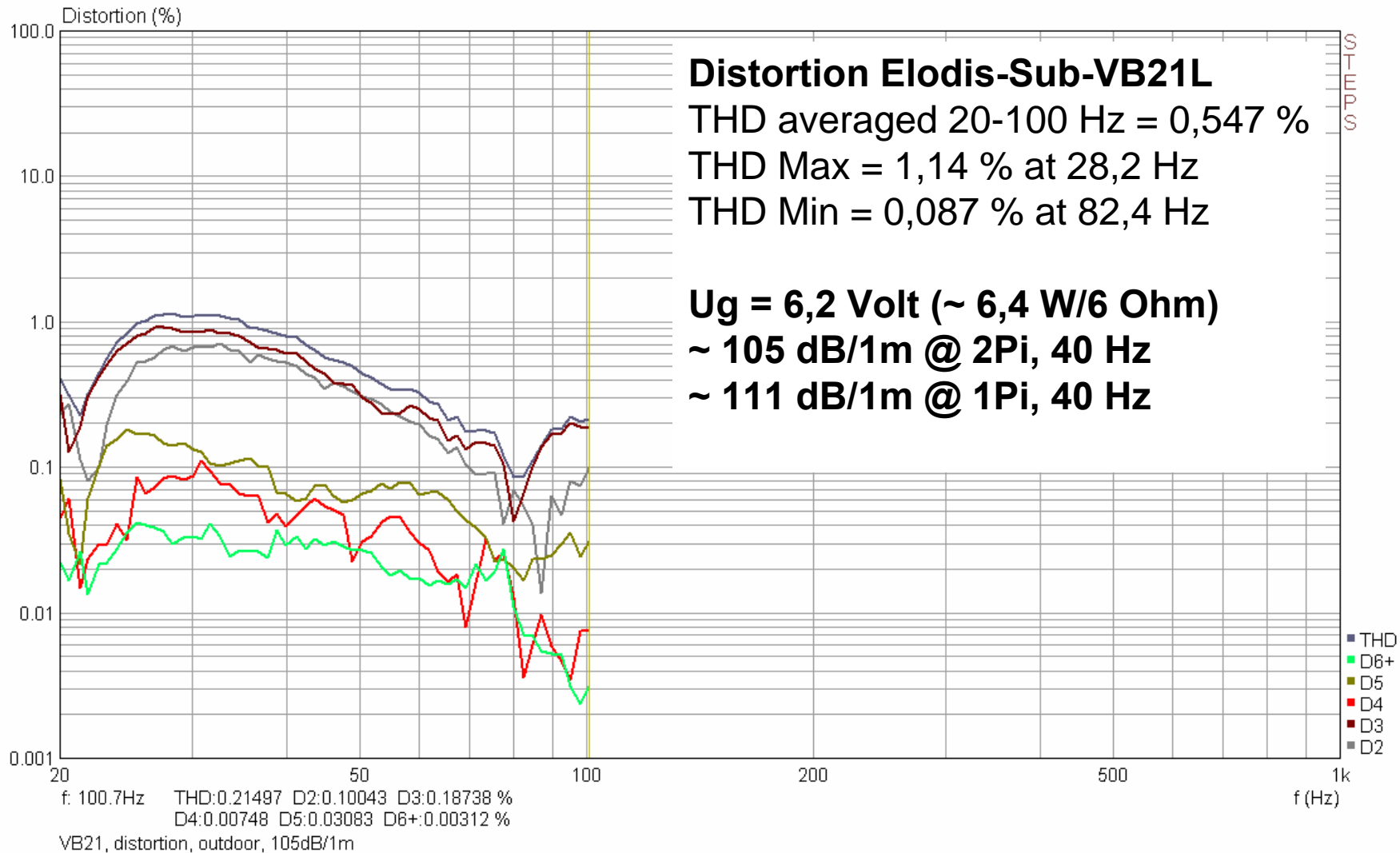
Distortion Elodis-Sub-VB21L, without filter networks



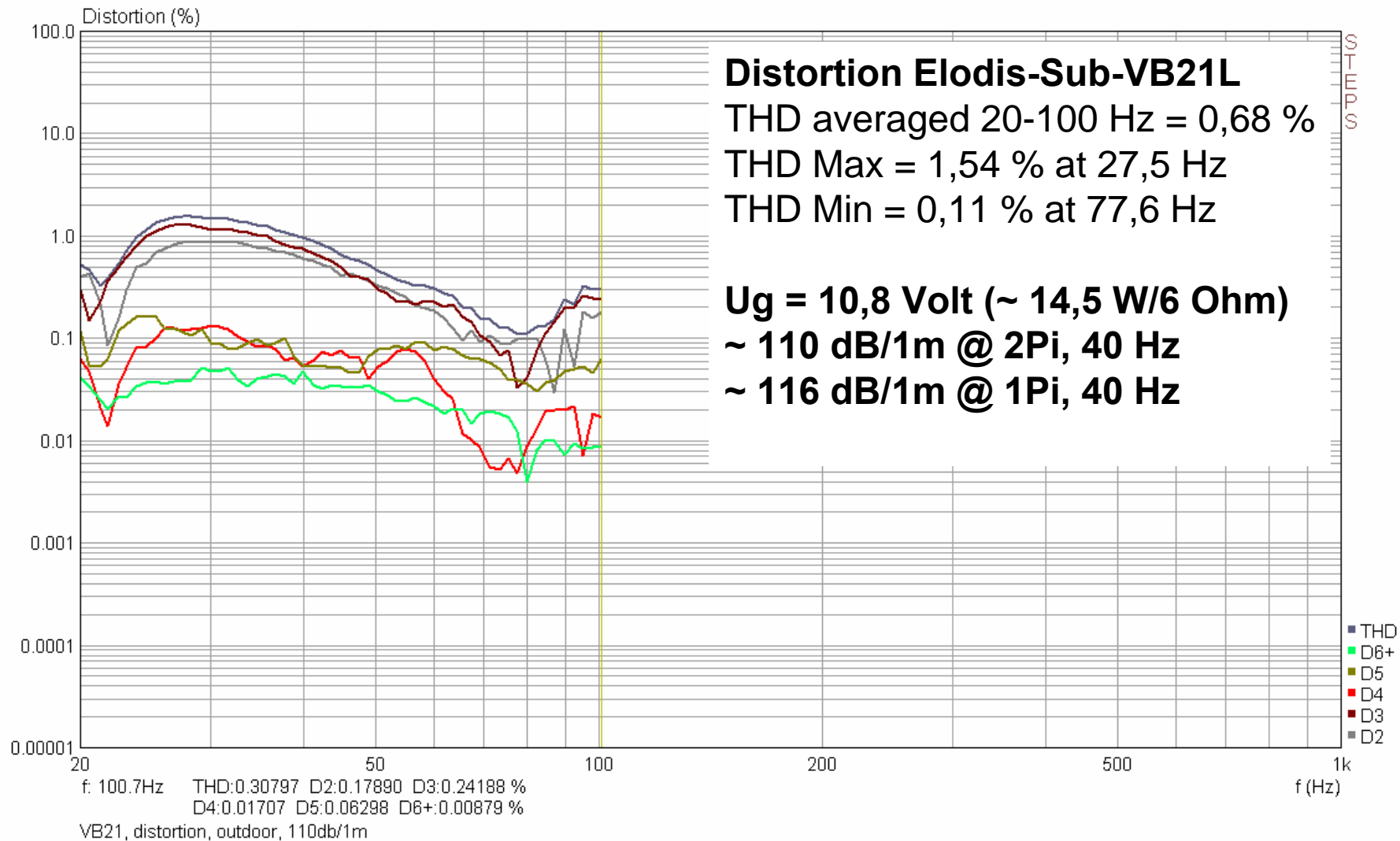
Distortion Elodis-Sub-VB21L, without filter networks



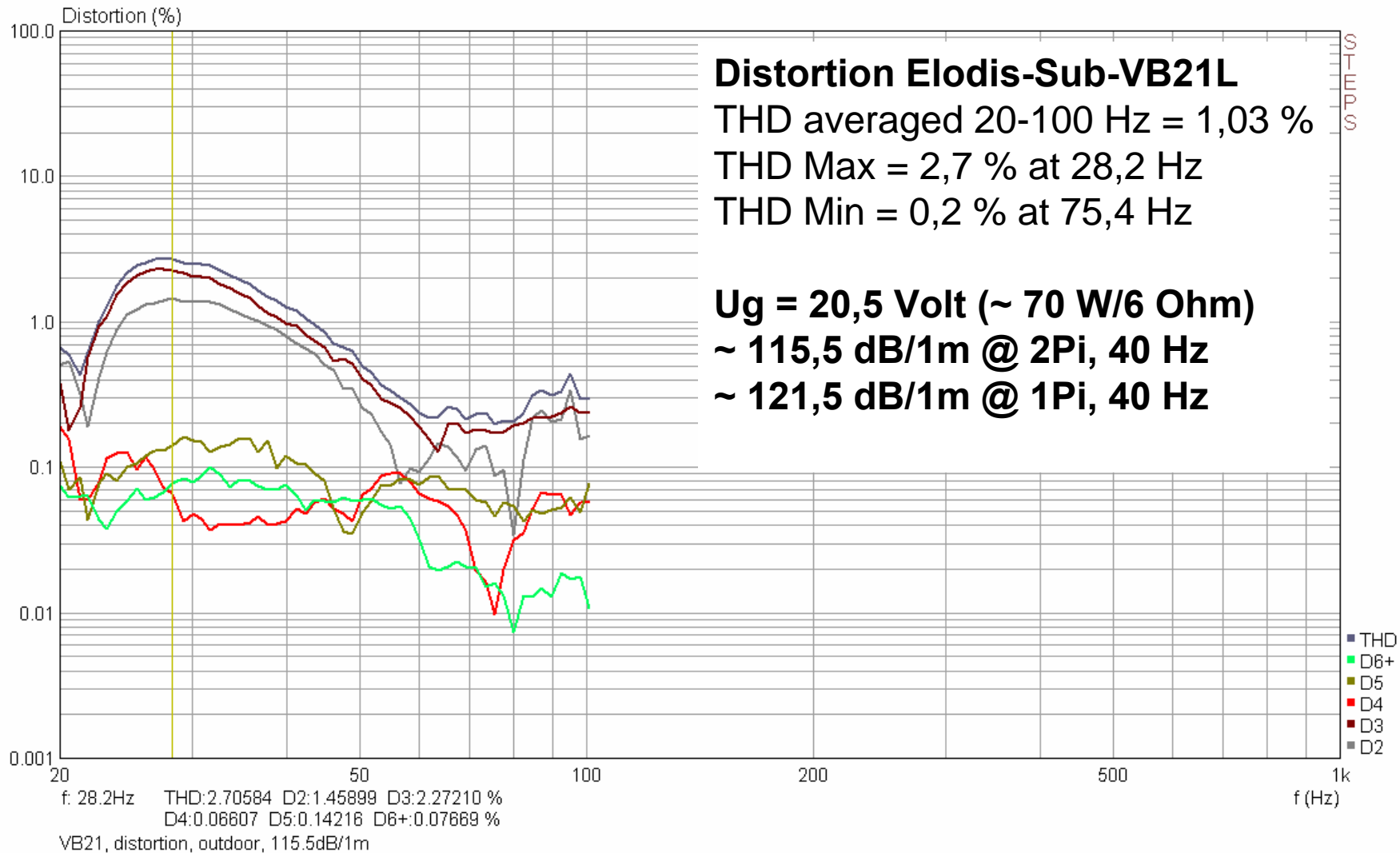
Distortion Elodis-Sub-VB21L, without filter networks



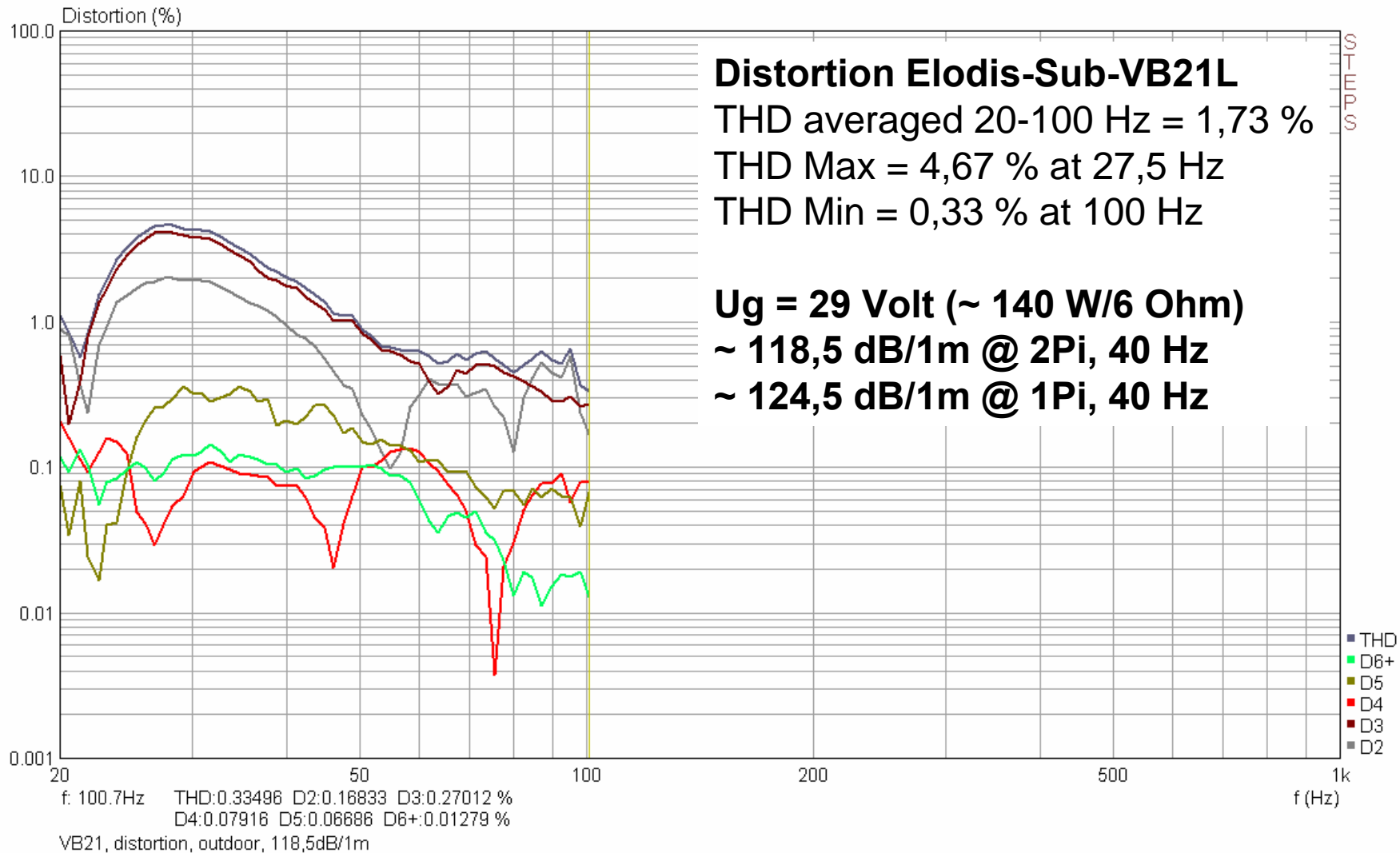
Distortion Elodis-Sub-VB21L, without filter networks



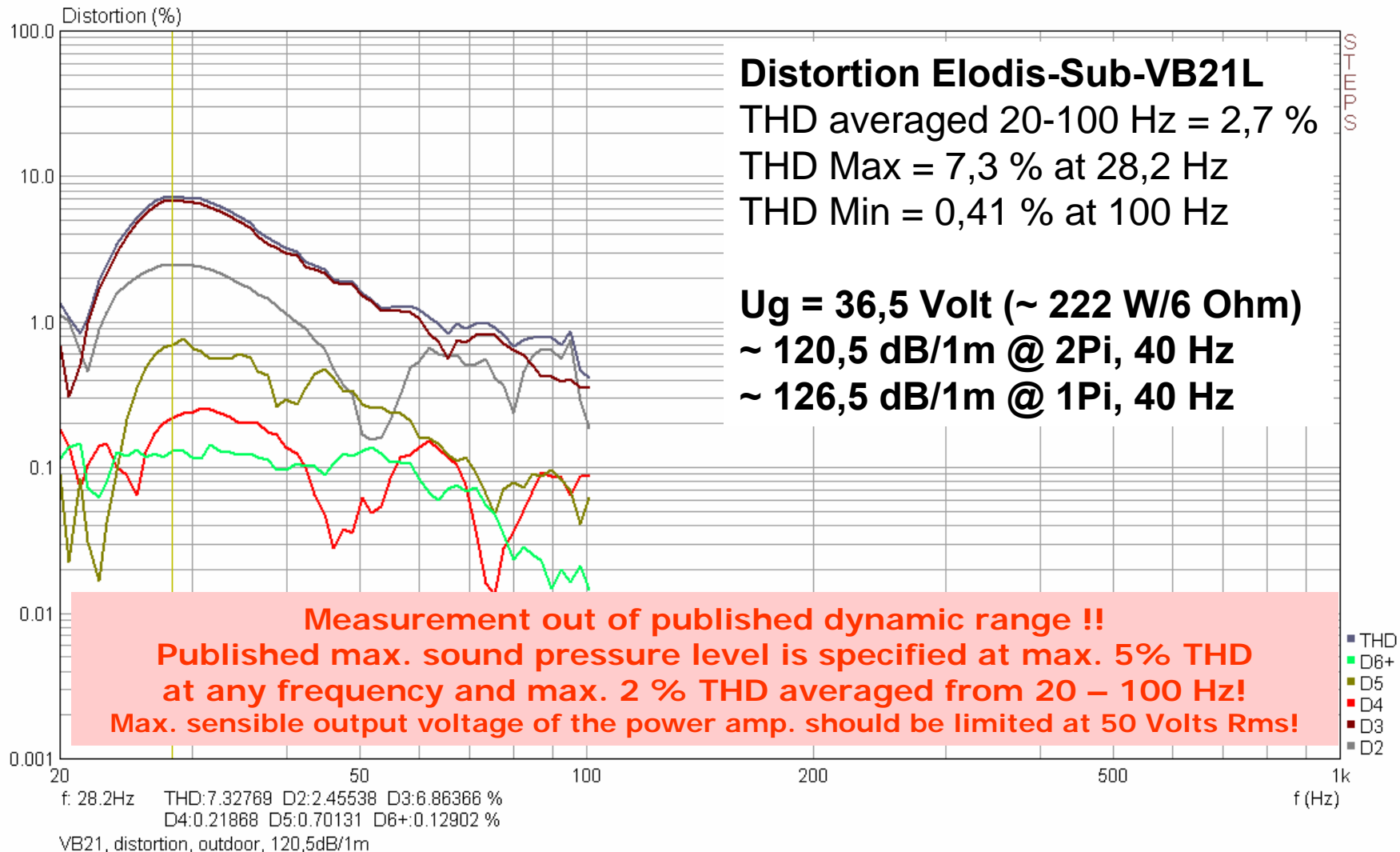
Distortion Elodis-Sub-VB21L, without filter networks



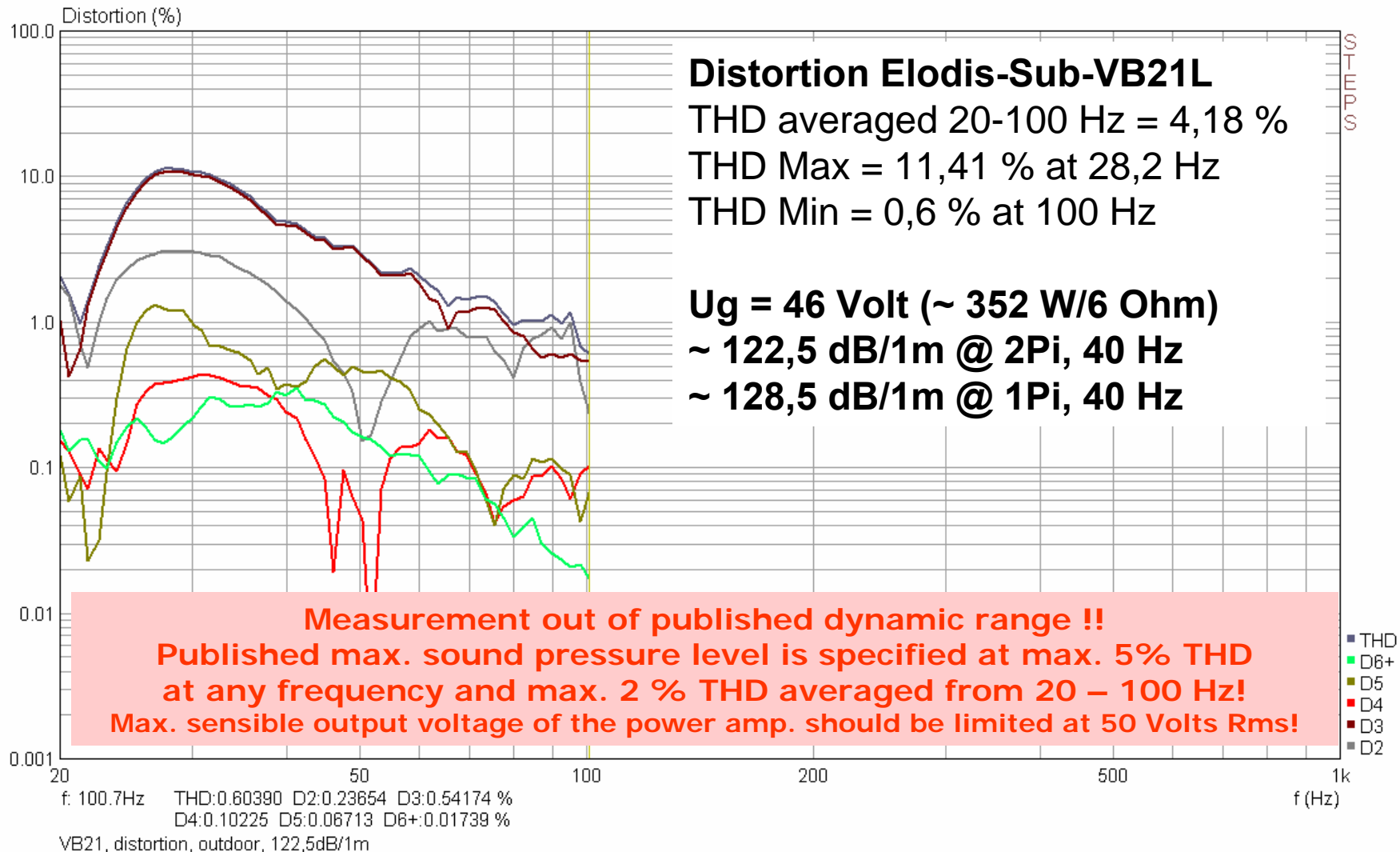
Distortion Elodis-Sub-VB21L, without filter networks



Distortion Elodis-Sub-VB21L, without filter networks



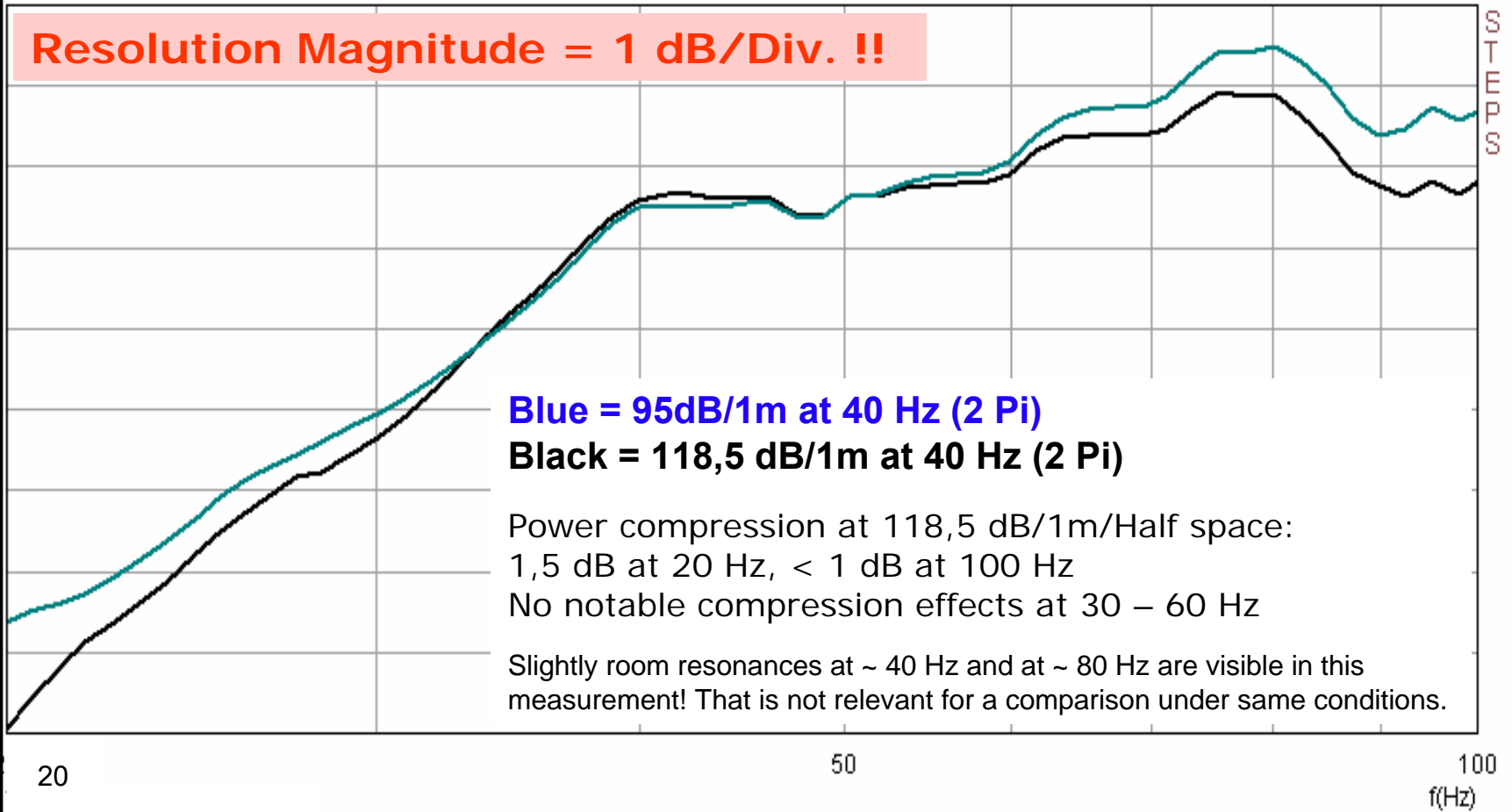
Distortion Elodis-Sub-VB21L, without filter networks



Power Compression Elodis-Sub-VB21L

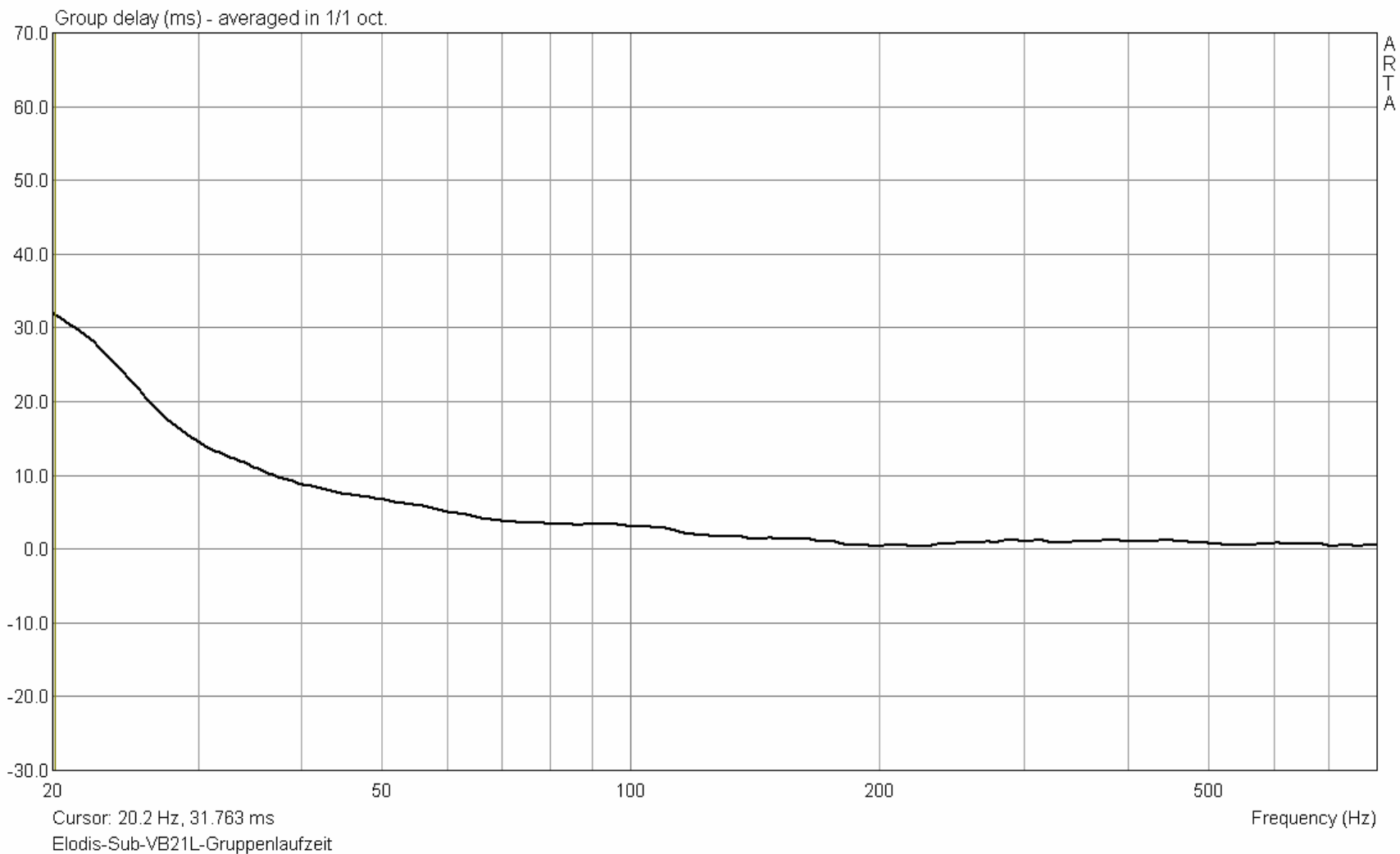
Comparison 95/118,5 dB/1m@2Pi (40 Hz), according 1,95/29 Volt

Magnitude dB re 20uPa

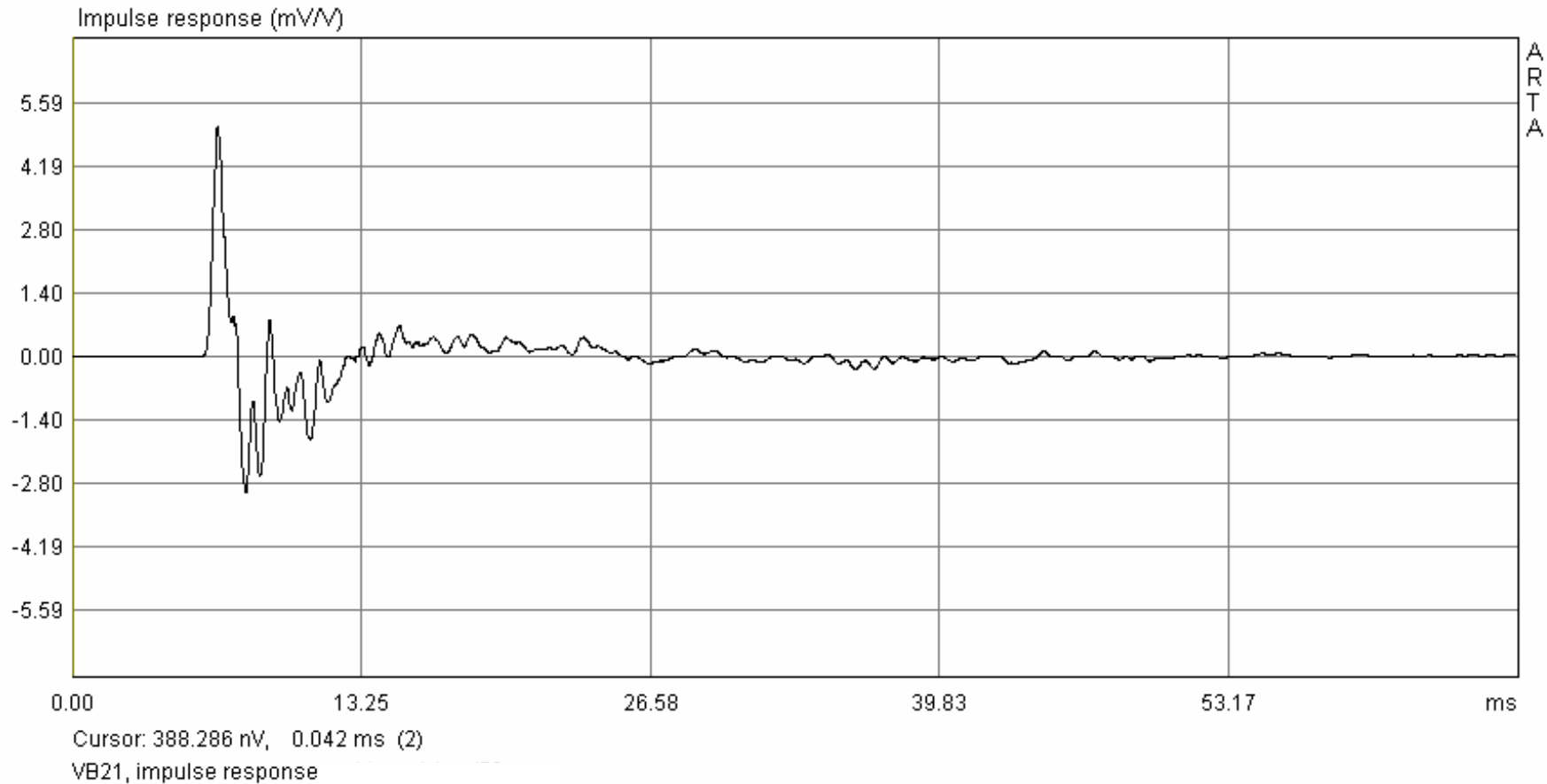


VB21, Kompression, 95/118,5dB/1m

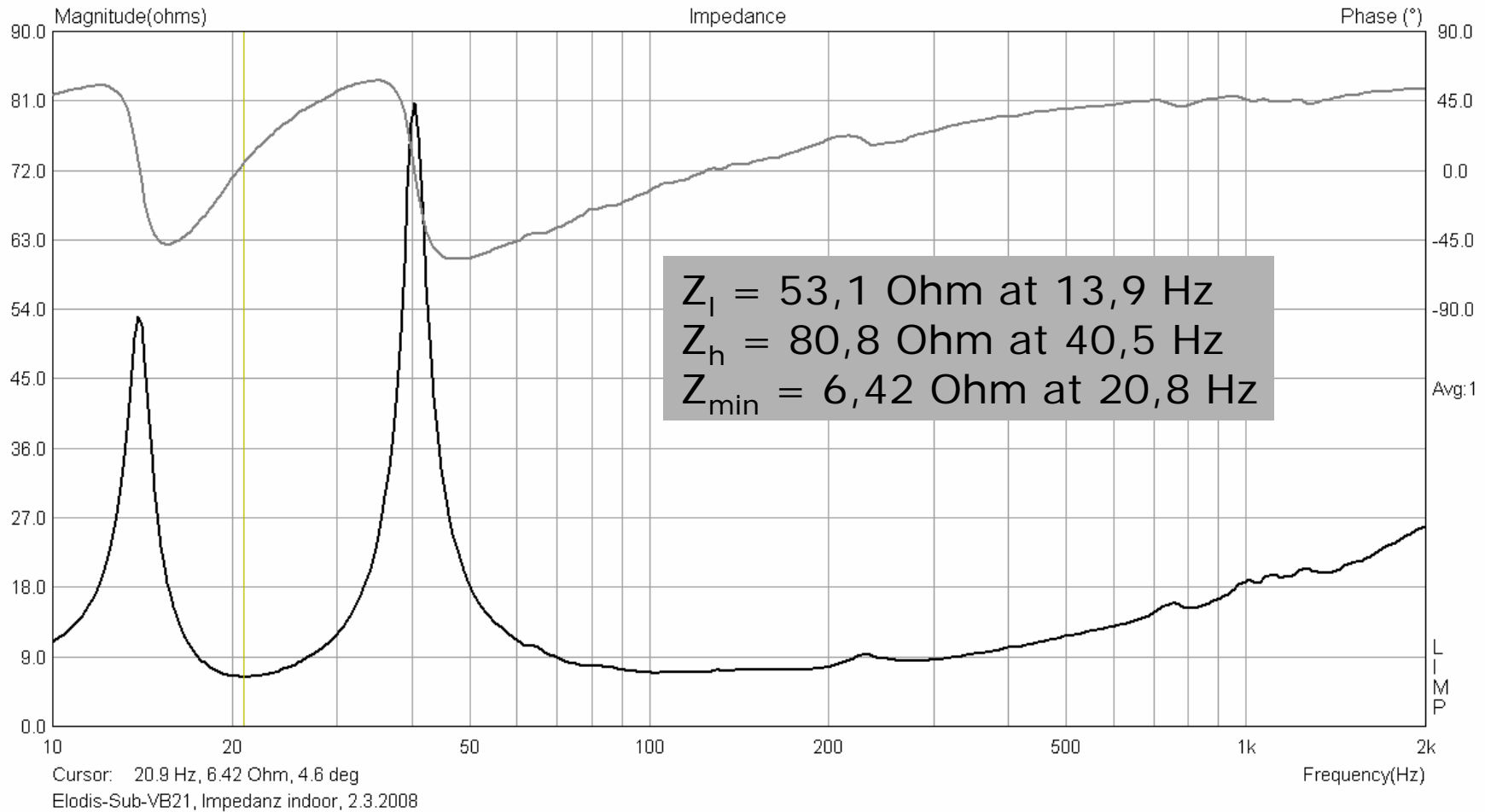
Group Delay Elodis-Sub-VB21L, without filter networks



Impulse response Elodis-Sub-VB21L, without filter networks



Elodis-Sub-VB21L, Impedance and Phase

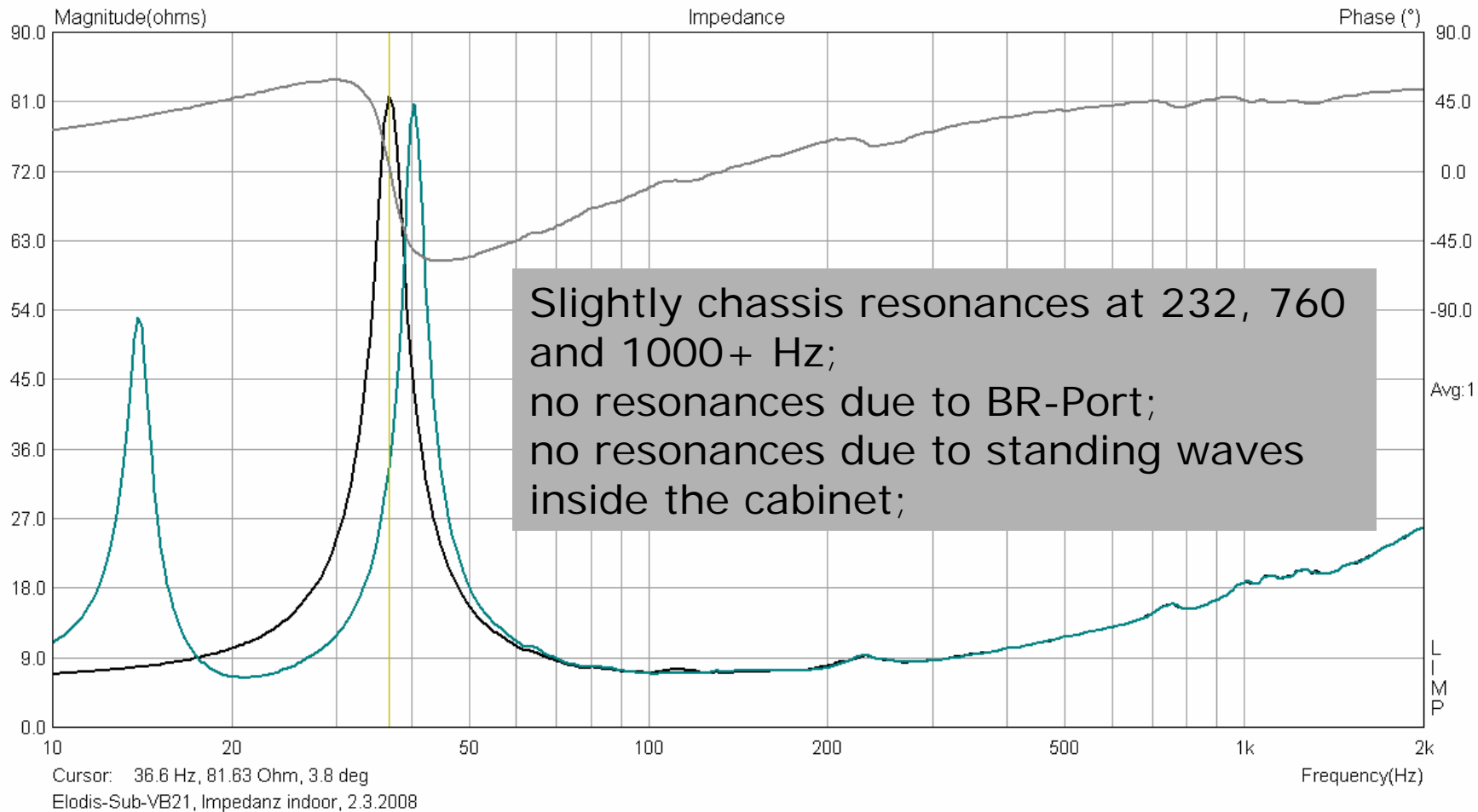


Elodis-Sub-VB21, Impedance, indoor, $R_g = 0.15 \text{ Ohm}$, $U_g = 3 \text{ Volt}$, sine steps 10-2000 Hz, FFT 131K, sampling rate 48K, **room resonances between 65 Hz and 150 Hz!**

Elodis-Sub-VB21L, Impedance and Phase

blue = bassreflex

black = BR-ports air-sealed



Elodis-Sub-VB21, Impedance, indoor, $R_g = 0.15 \text{ Ohm}$, $U_g = 3 \text{ Volt}$, sine steps 10-2000 Hz, FFT 131K, sampling rate 48K, **room resonances between 65 Hz and 150 Hz!**

Comparison → Sealed box – BR

Recommended maximum dimensions of the listening room for one piece of

Elodis-Sub-VB21L:

Up to approximately

700 cubic meters

equal to

25,000 cubic feet

which would correspond to the size of a cinema hall with about 125 seats

Copyright:

*Copyright © 2008 by Franz Hinterlehner
Elodis Subwoofer*

All images and texts used on this brochure as well as the layout are protected by copyright.

All brands cited on this brochure are registered trademarks or brand names, even though this may not be stated individually in each case.

Created by

Franz Hinterlehner



Am Silberberg 1
A-3375 Krummnussbaum

Mobil: +43 (0) 676 738 2661

Mail: hinterlehner@elodis-subwoofer.com

Web: www.elodis-subwoofer.com