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Acoustics, Processing and Software Design for Pro Audio

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THE19-2 SUB Pro Passive Sealed Shallow

Measurements Report

Ascendo

Date	Author	Changes	Version
15/05/2026	Contralto		V1
07/07/2026	Contralto	Freq Response with DSP CAE2034-A	V2
17/07/2026	Contralto	Add DSP Settings	V3

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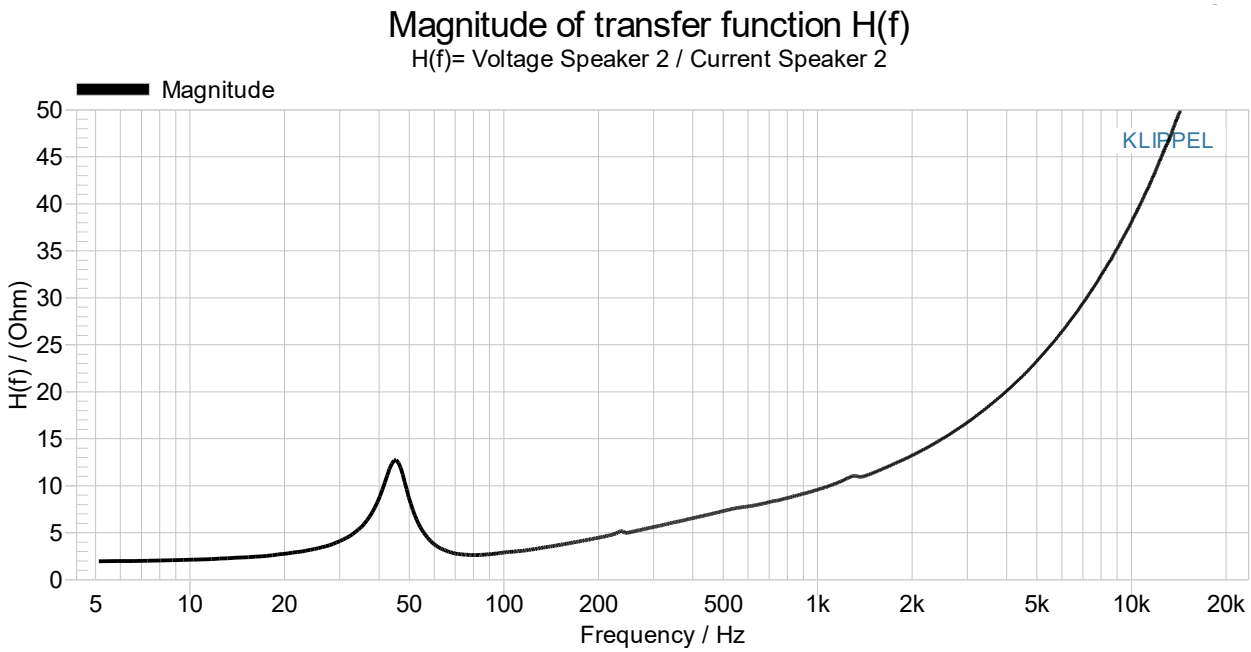
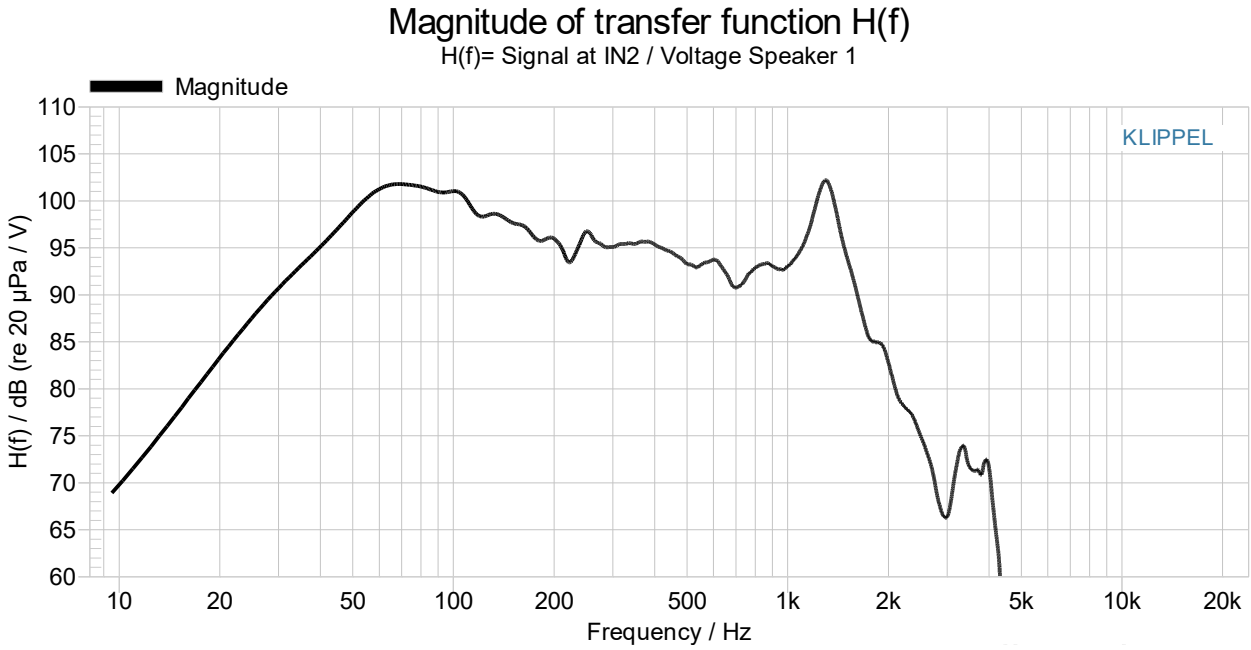
1. Impedance



2. Frequency Response in Half Space

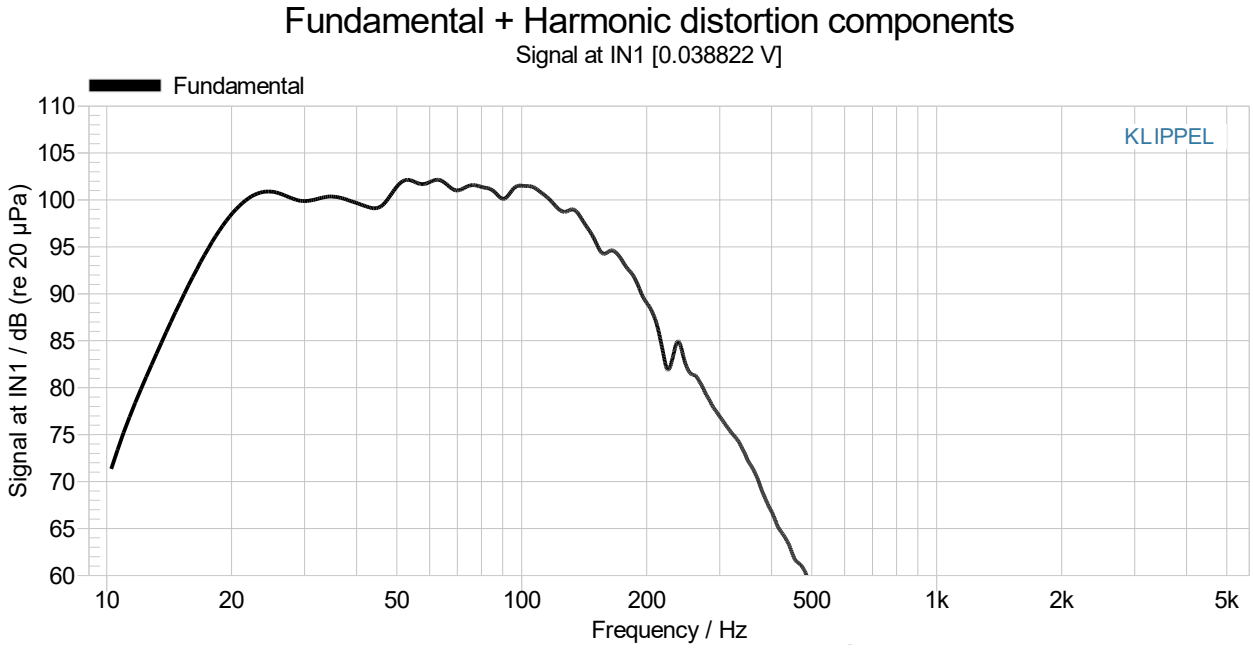
2.1. Sensitivity

2.83V@1m in Half Space

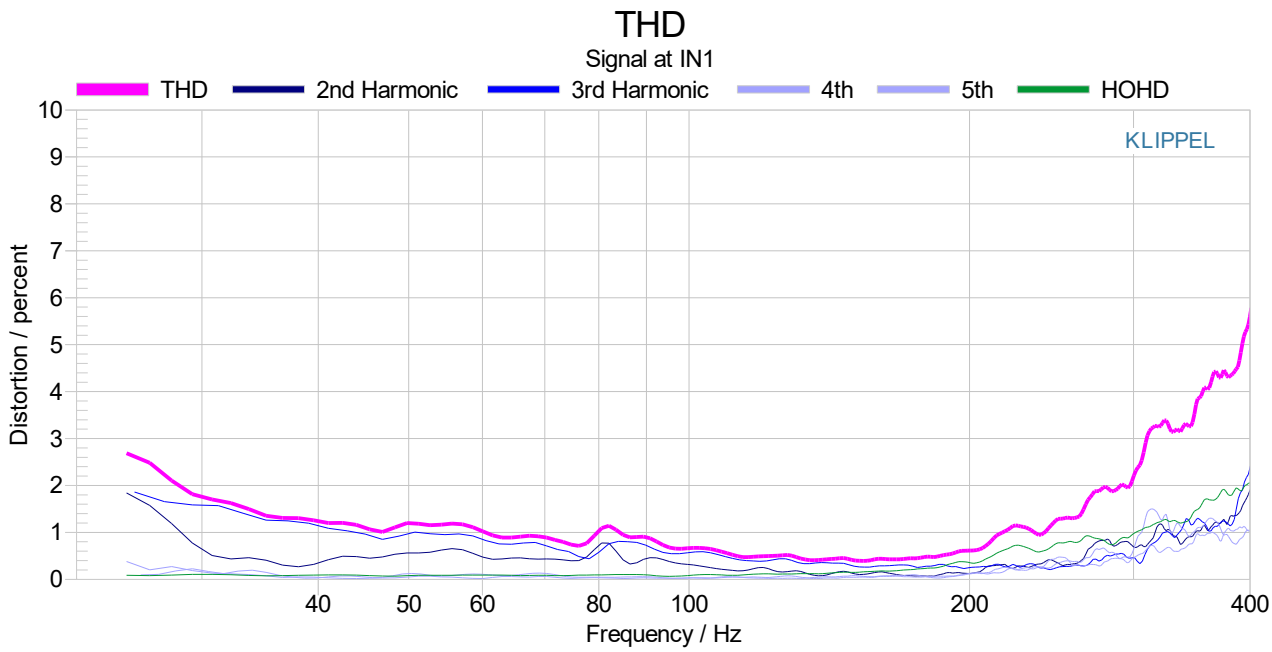


2.2. Level 100dB SPL with DSP Processing

Frequency Response in half Space

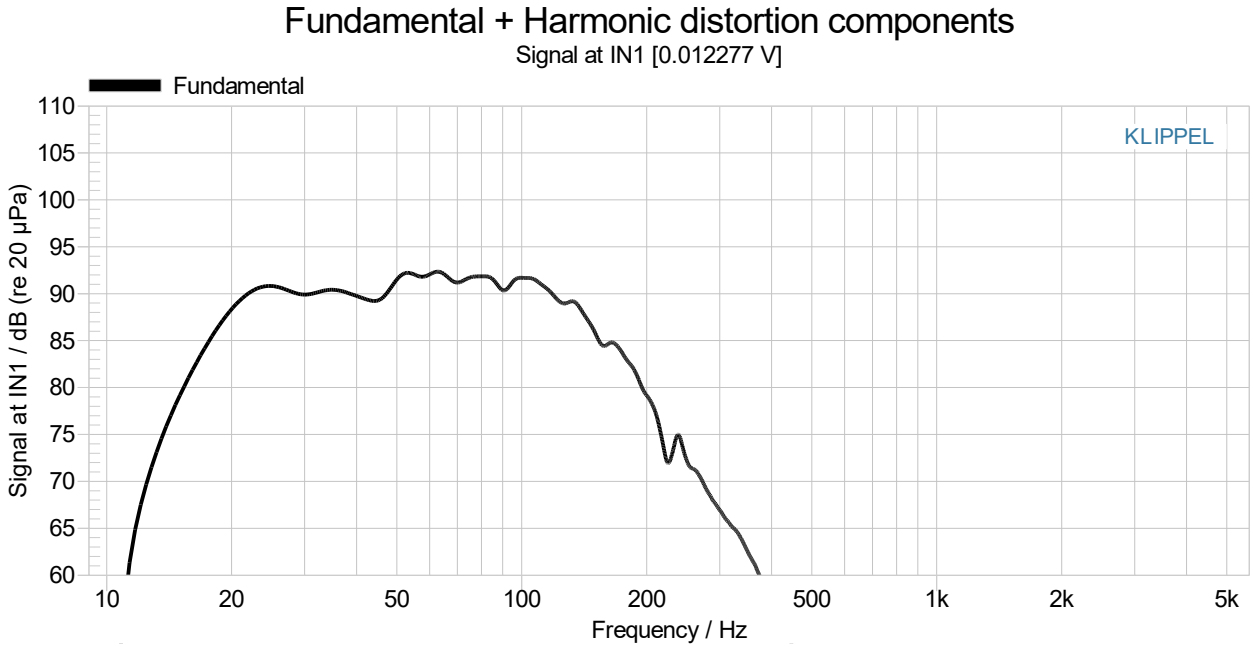


Total Harmonic Distortion

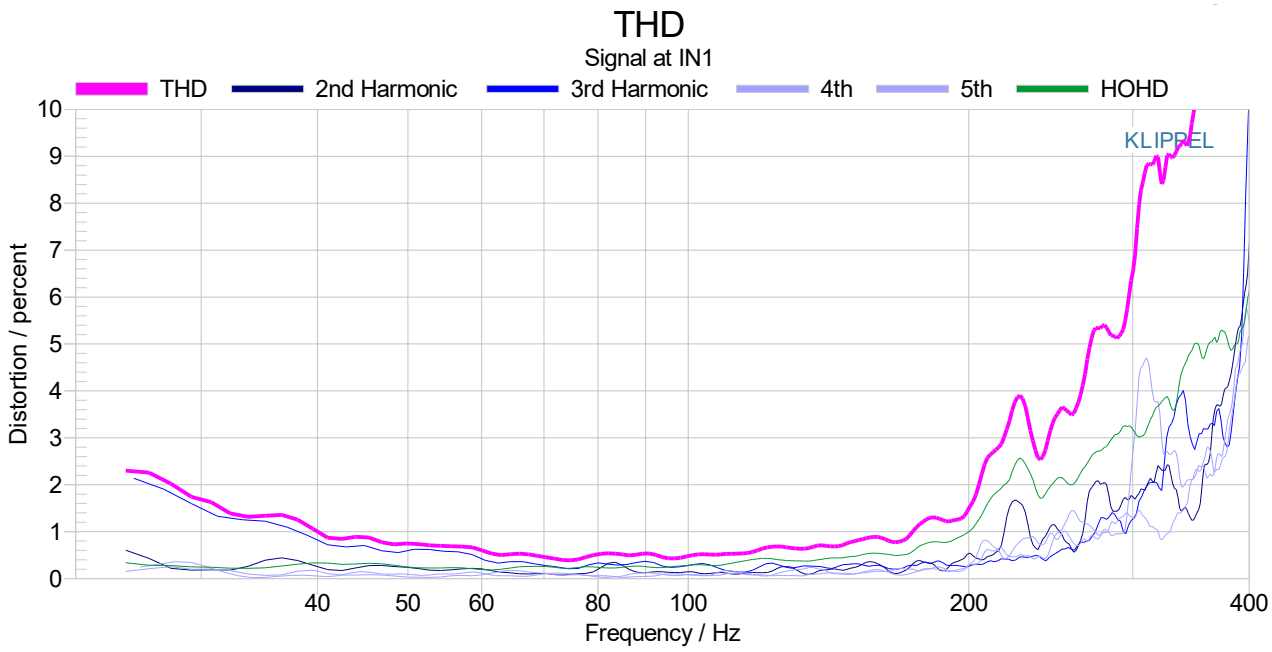


2.3. Level 90dB SPL with DSP Processing

Frequency Response in half Space



Total Harmonic Distortion

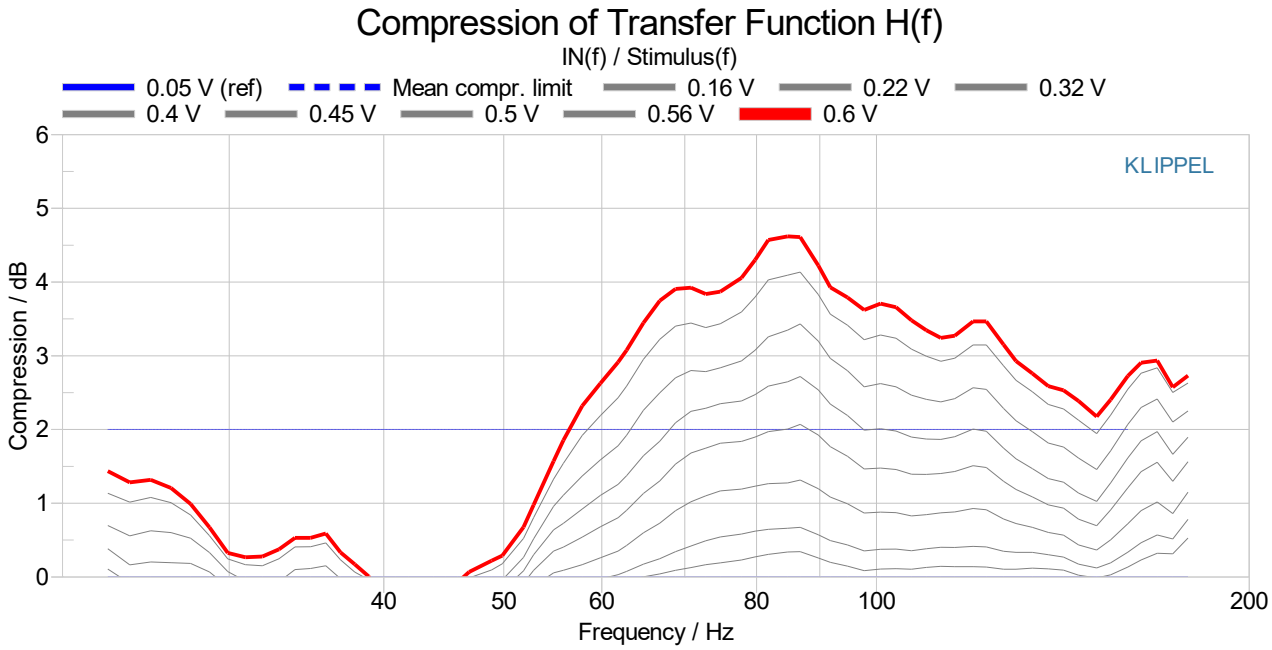


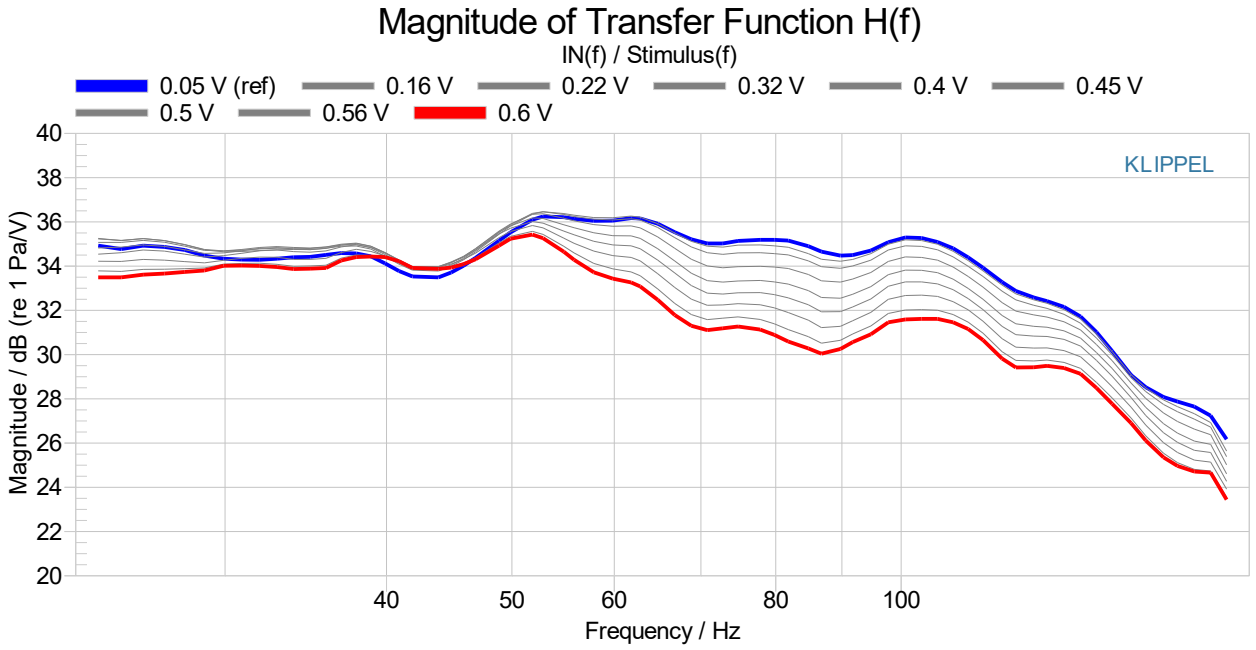
3. DSP Settings

TYPE	FREQ (Hz)	GAIN (dB)	QUALITY
HP VAR Q	15		1.6
Peak	18	10	1.2
Peak	44	-3	3.5
Peak	65	-5	2.7
Peak	107	-3	1
All Pass 2nd	150		0.7
LP 24dB LW-R	157		
Peak	245	-3	5
All Pass 2nd	300		2.6
All Pass 2nd	455		5

4. MAX Usable SPL based on CEA2034-A in Half Space

Power Amplifier: *4 x 2000W @ 8ohm*
DSP Processing: *YES (LP 157Hz)*
Frequency Band Evaluation: *20Hz to 160Hz*
Length of Stimulus: *2 Minutes*
Stop Condition: *2dB Mean Compression*
Maximum Input Voltage: *0.6V*
Max Usable Continuous SPL @ 1m: 122dB
Max Peak SPL @ 1m: 130.8dB

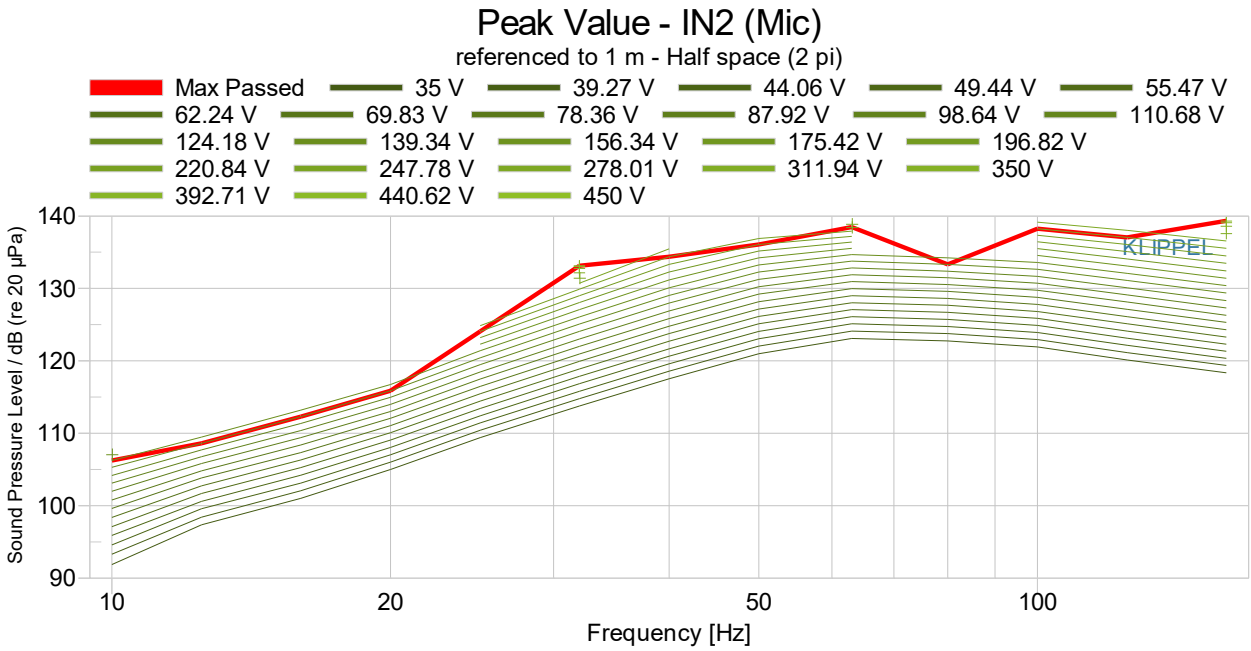




5. Peak SPL based on CEA2010-B in Half Space

DSP Processing: NO
Power Amplifier: 2 x 9000W @ 4ohm

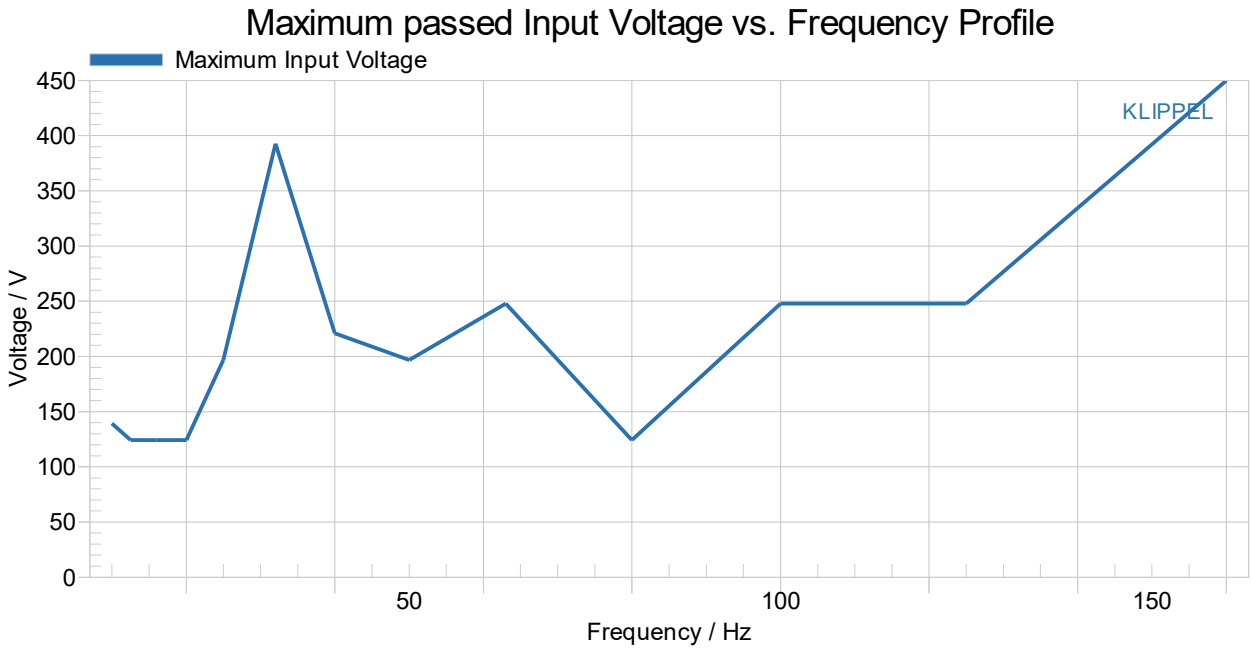
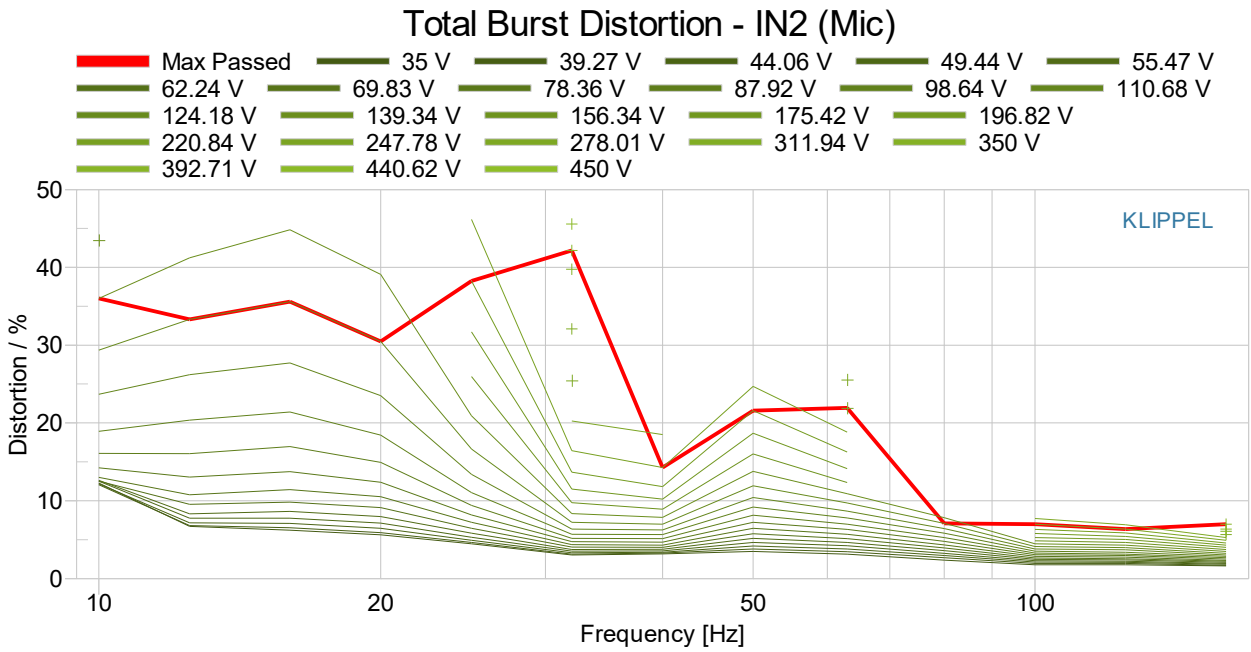
5.1. Max Peak SPL



5.2. Peak Values

Tone Burst Center Frequency (Hz)	Maximum SPL (dB)
10	106.23
12.5	108.6
16	112.3
20	115.86
25	124.05
32	133.12
40	134.39
50	136.06
63	138.49
80	133.31
100	138.26
125	137.04
160	139.36
Sound pressure referenced to 1 m in Half space (2 pi)	

5.3. Max Peak Input Voltage



5.4. THD On Burst