

# CCM5P - Cinema Speaker

## Report of CCM5P Speaker

### ASCENDO

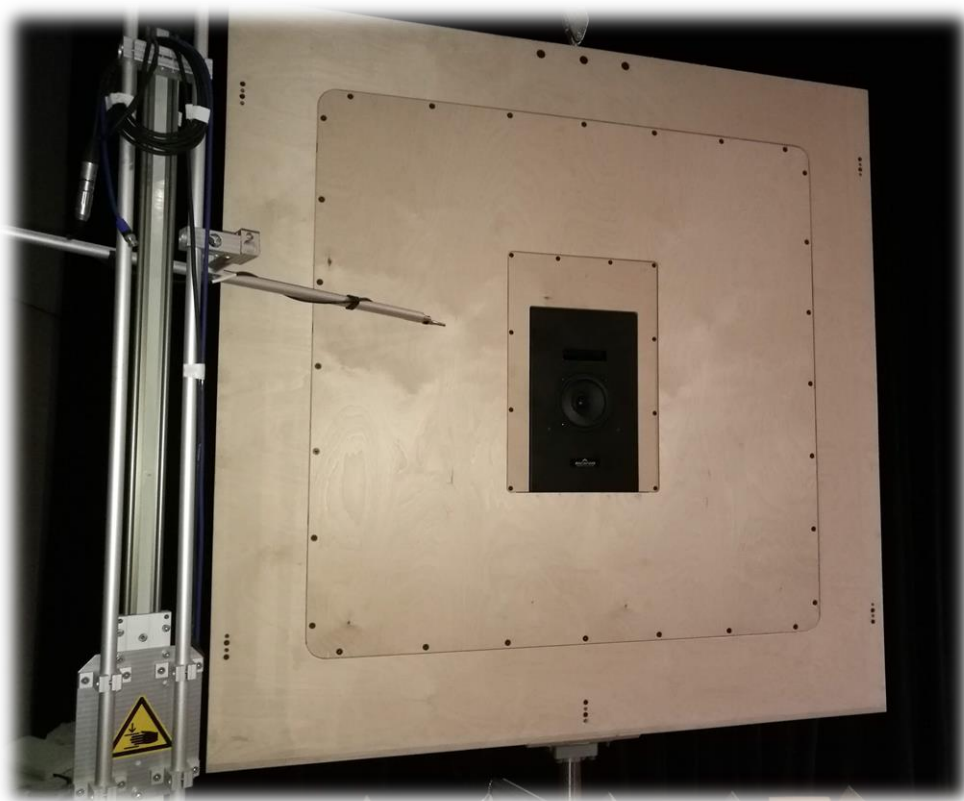
---

Date	Author	Changes	Version
10/11/2021	GL		V1

## Summary

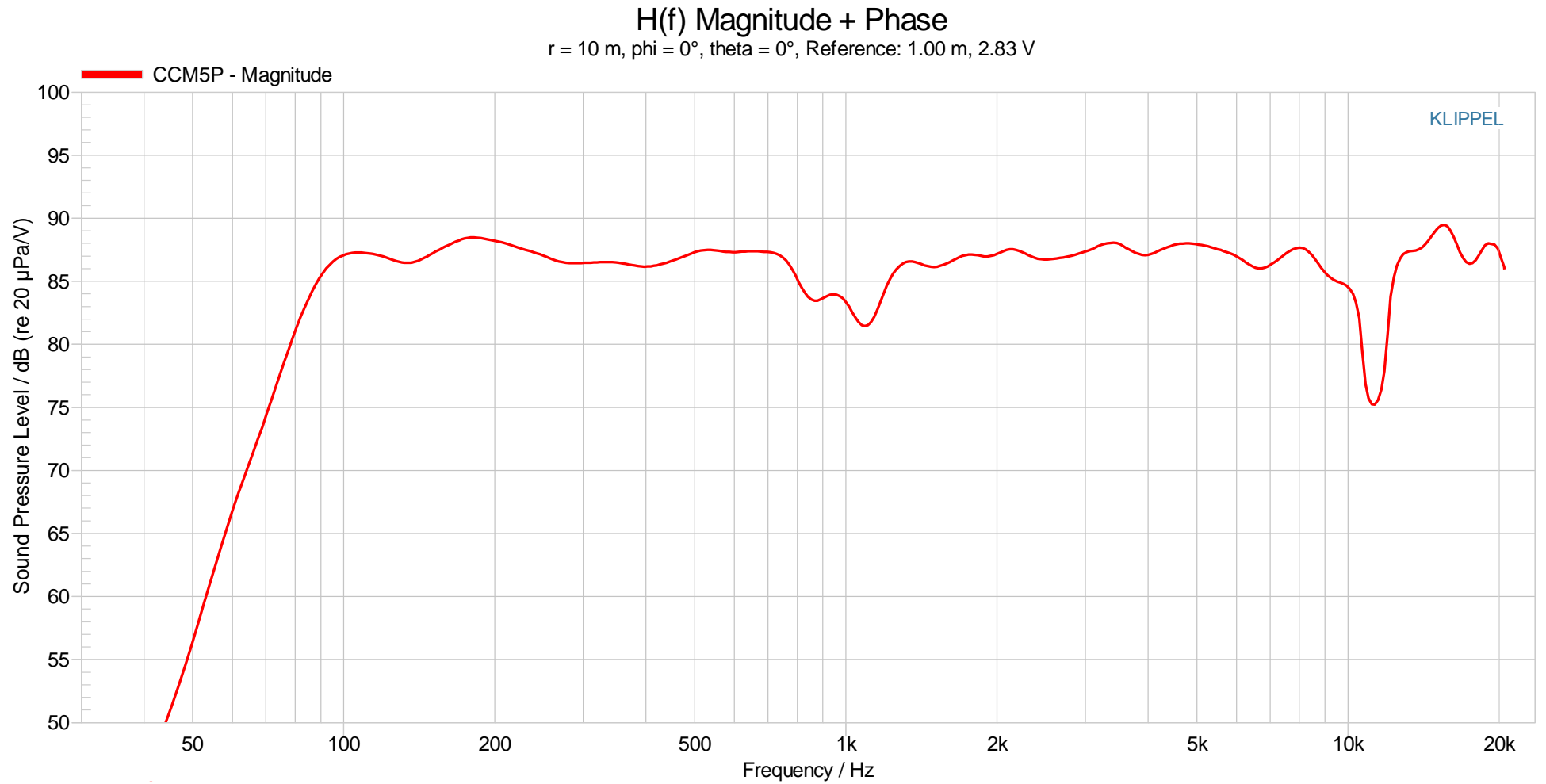
1.	Pictures of measurements .....	3
2.	Frequency Response .....	4
3.	Contour Plot .....	5
3.1.	Horizontal .....	5
3.2.	Vertical.....	6
4.	CEA2034 Spinorama .....	7
4.1.	Directivity Index.....	8
4.2.	In-Room response .....	9
4.3.	Early reflections.....	10
4.4.	Horizontal Reflections .....	11
4.5.	Vertical Reflections.....	12
4.6.	Horizontal Frequency Response.....	13
4.7.	Vertical Frequency Response .....	14
5.	Harmonic Distortion .....	15
6.	MTON Max SPL – 1s Stimulus.....	16
6.1.	Results .....	16
6.2.	Compression Chart .....	17
6.3.	Multi Tone Distortion Chart .....	18
7.	CEA2010B.....	19
7.1.	Max Peak SPL.....	19
7.2.	Max Peak Voltage .....	20
7.3.	THD on Burst.....	21

## 1. Pictures of measurements



## 2. Frequency Response

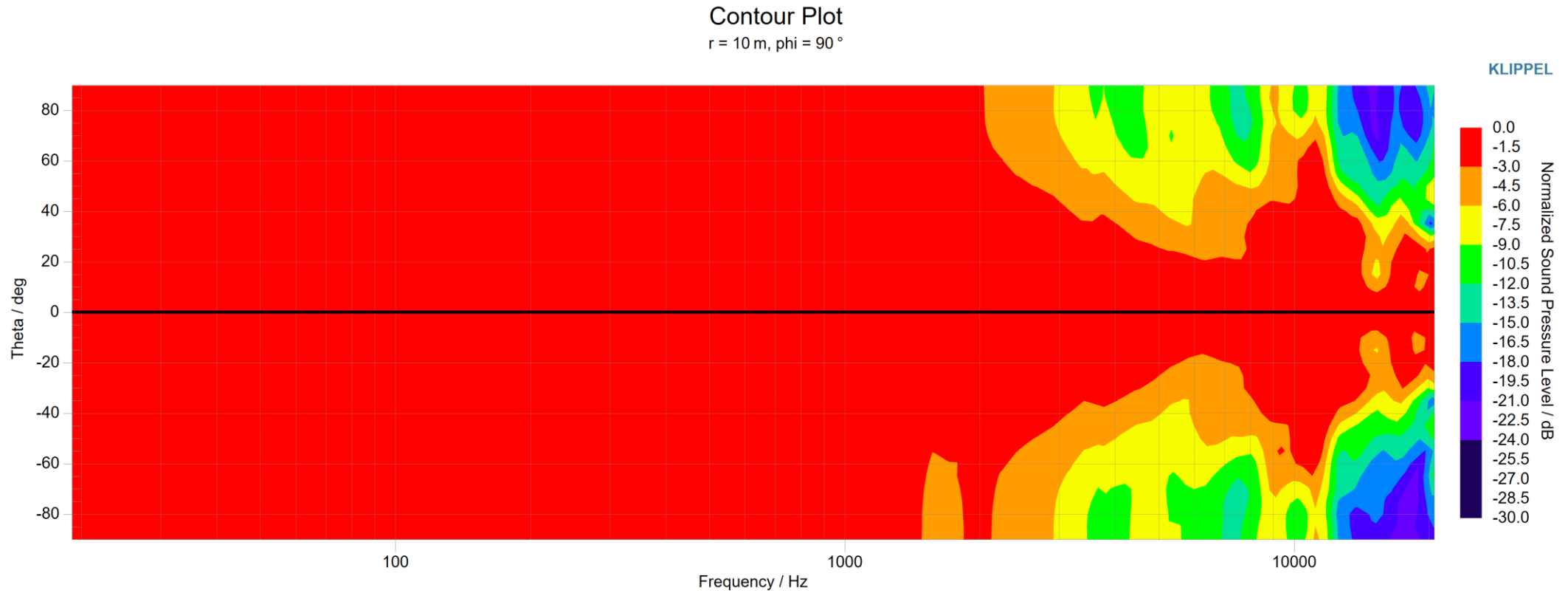
2,83v @1m – 1/6 oct. Smoothing



### 3. Contour Plot

#### 3.1. Horizontal

*Referenced @10m – Baffle loaded ( $2\pi$  steradians)*

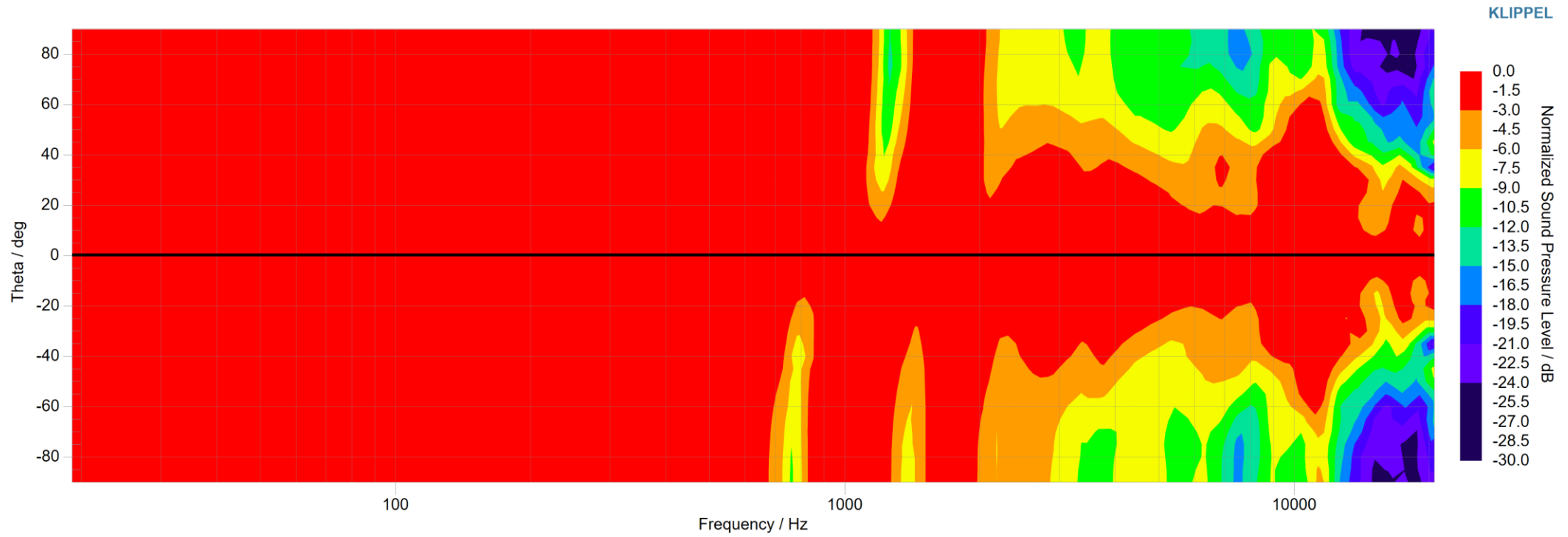


### 3.2. Vertical

Referenced @10m – Baffle loaded ( $2\pi$  steradians)

#### Contour Plot

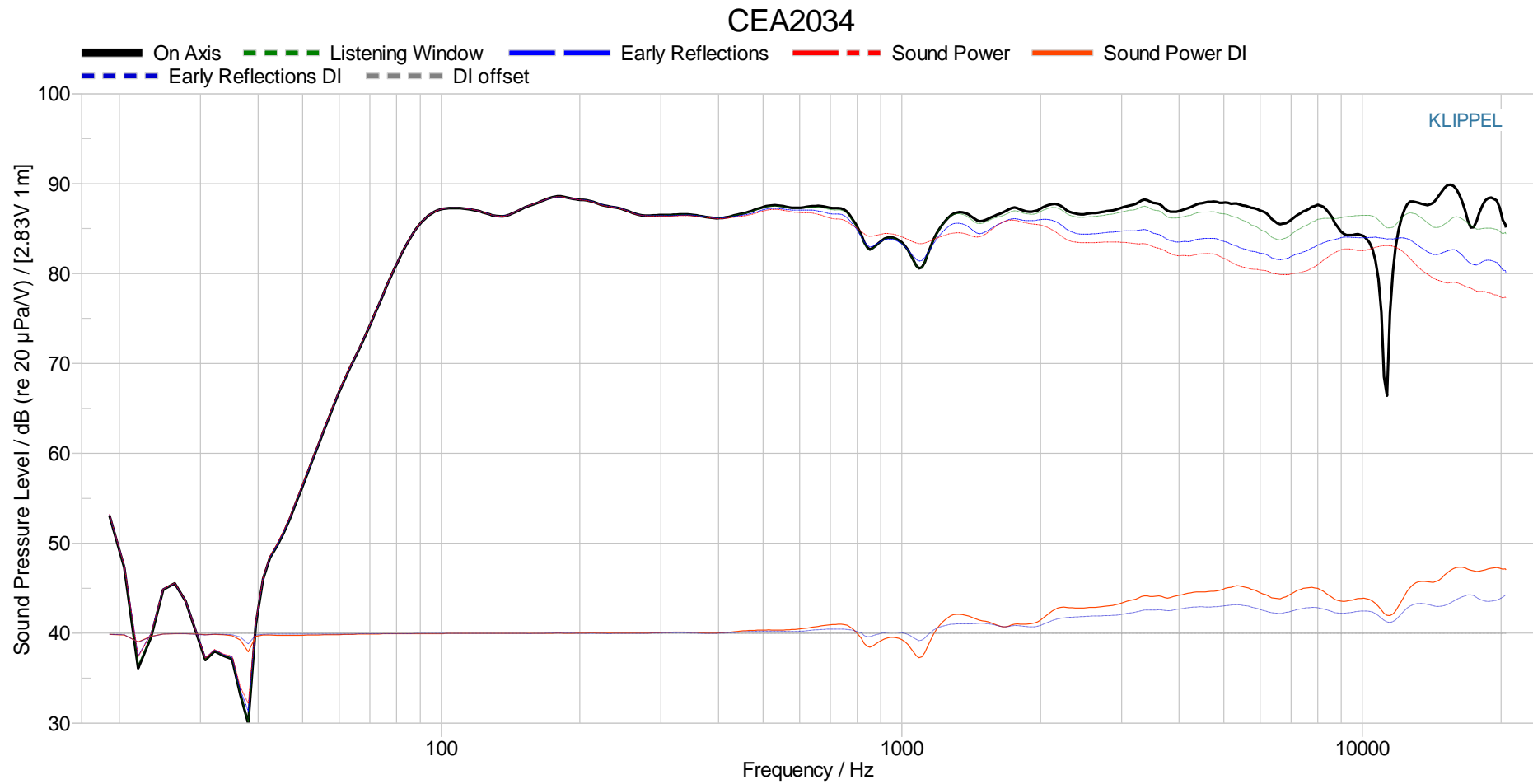
$r = 10\text{ m}$ ,  $\phi = 0^\circ$



Normalized on Axis – 1/6 oct. Smoothing

## 4. CEA2034 Spinorama

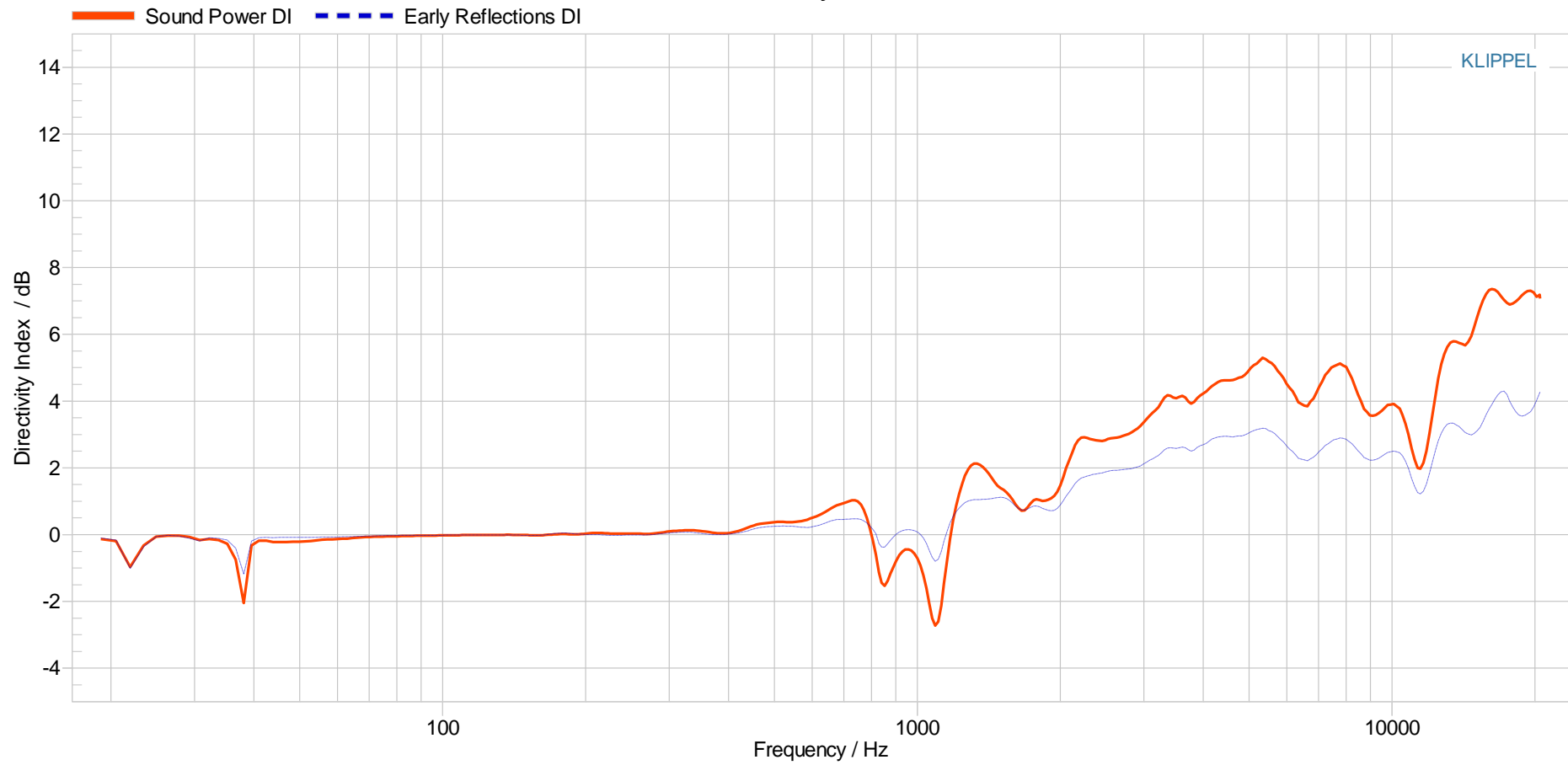
2,83v @1m – 1/6 oct. Smoothing



## 4.1. Directivity Index

*1/6 oct. Smoothing*

### Directivity Index

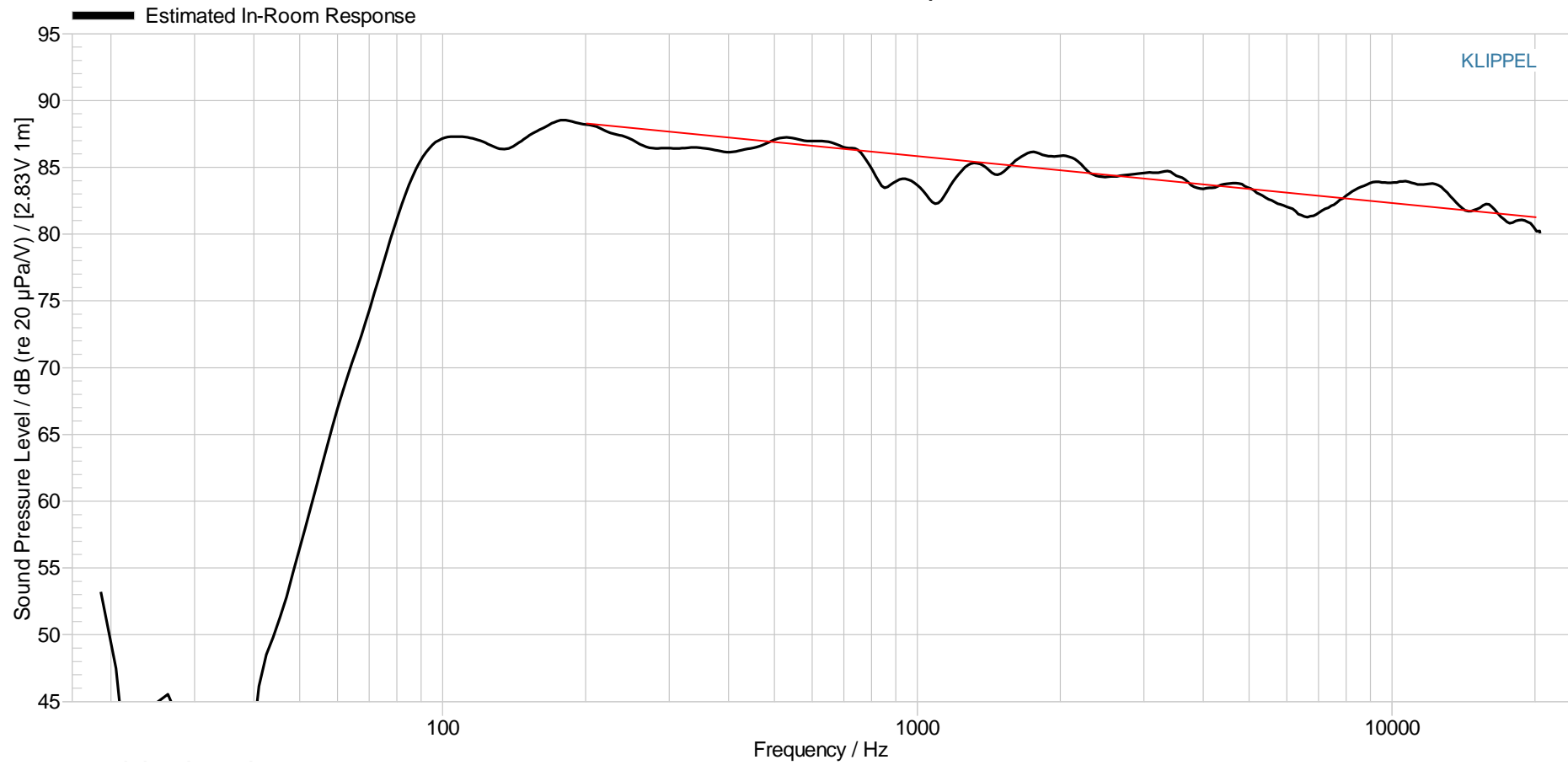




## 4.2. In-Room response

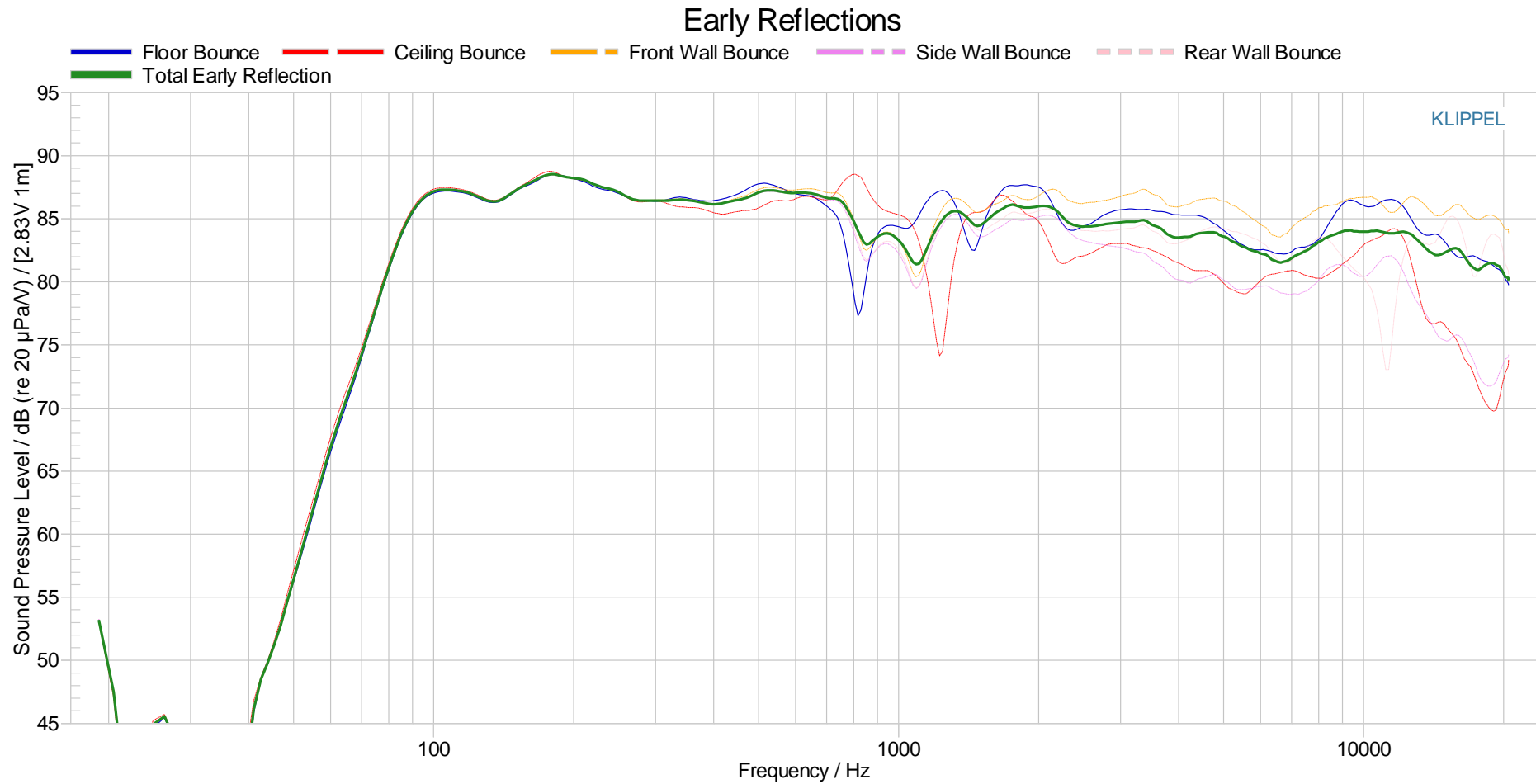
*1/6 oct. Smoothing*

Estimated In-Room Response



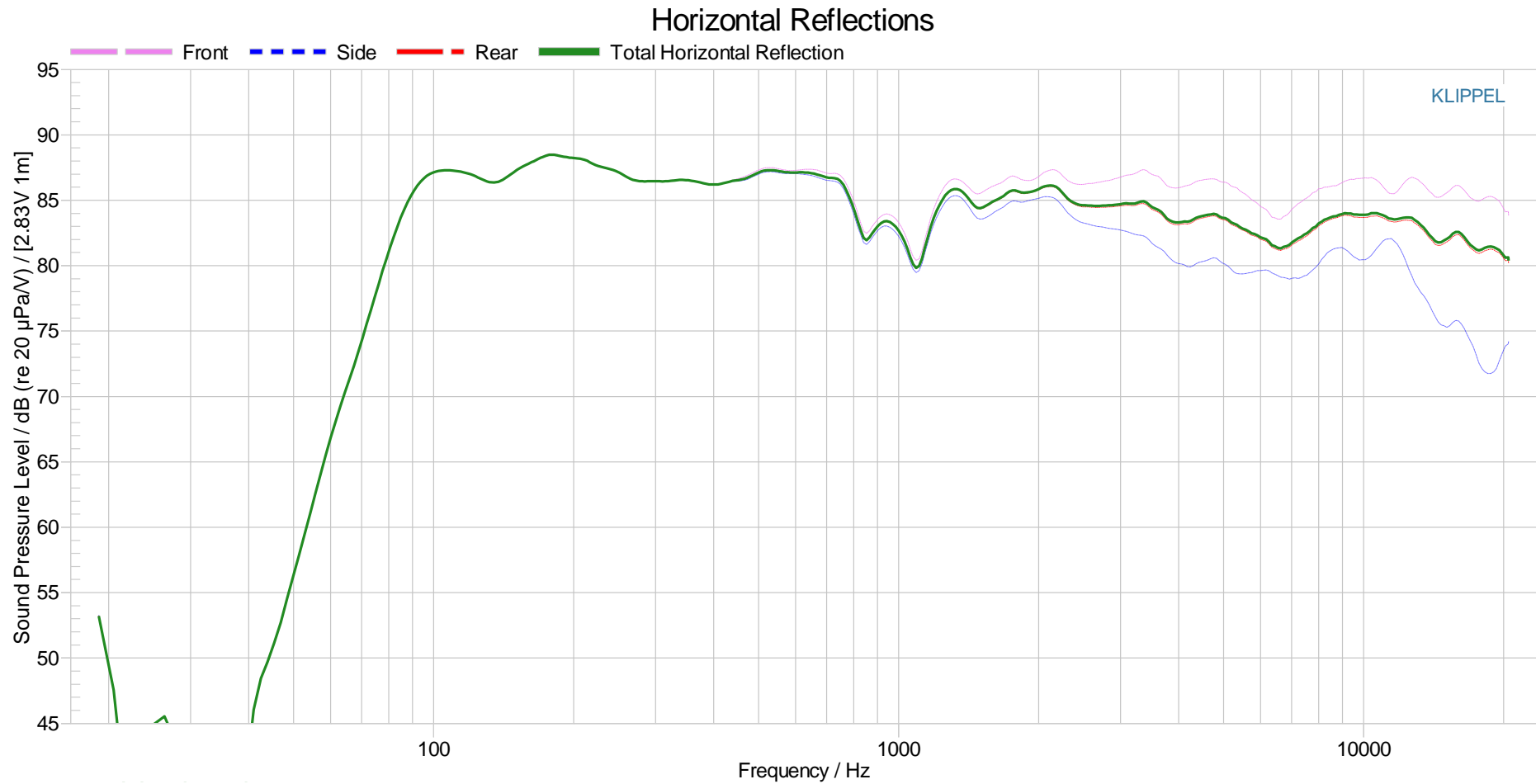
### 4.3. Early reflections

*1/6 oct. Smoothing*



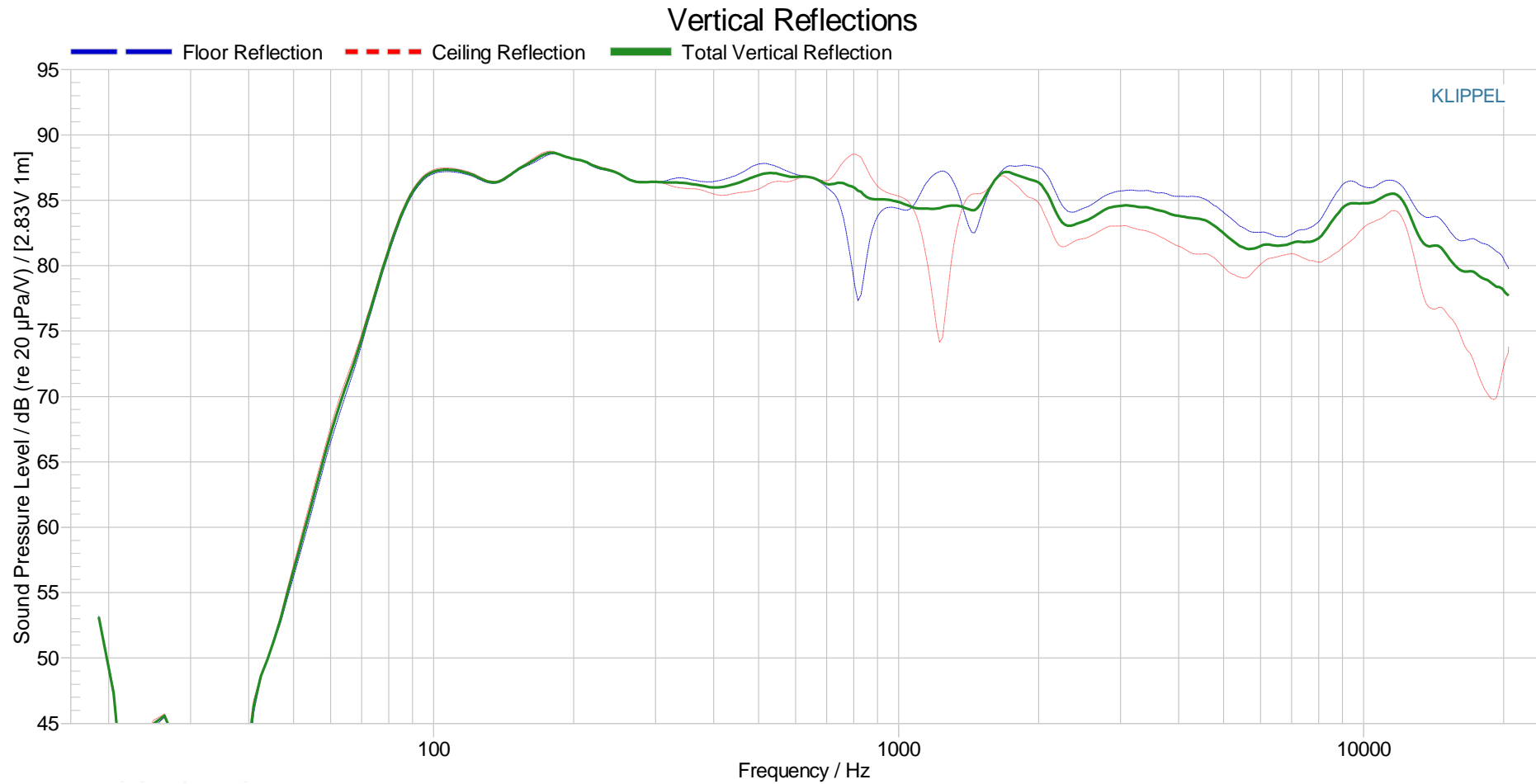
## 4.4. Horizontal Reflections

*1/6 oct. Smoothing*



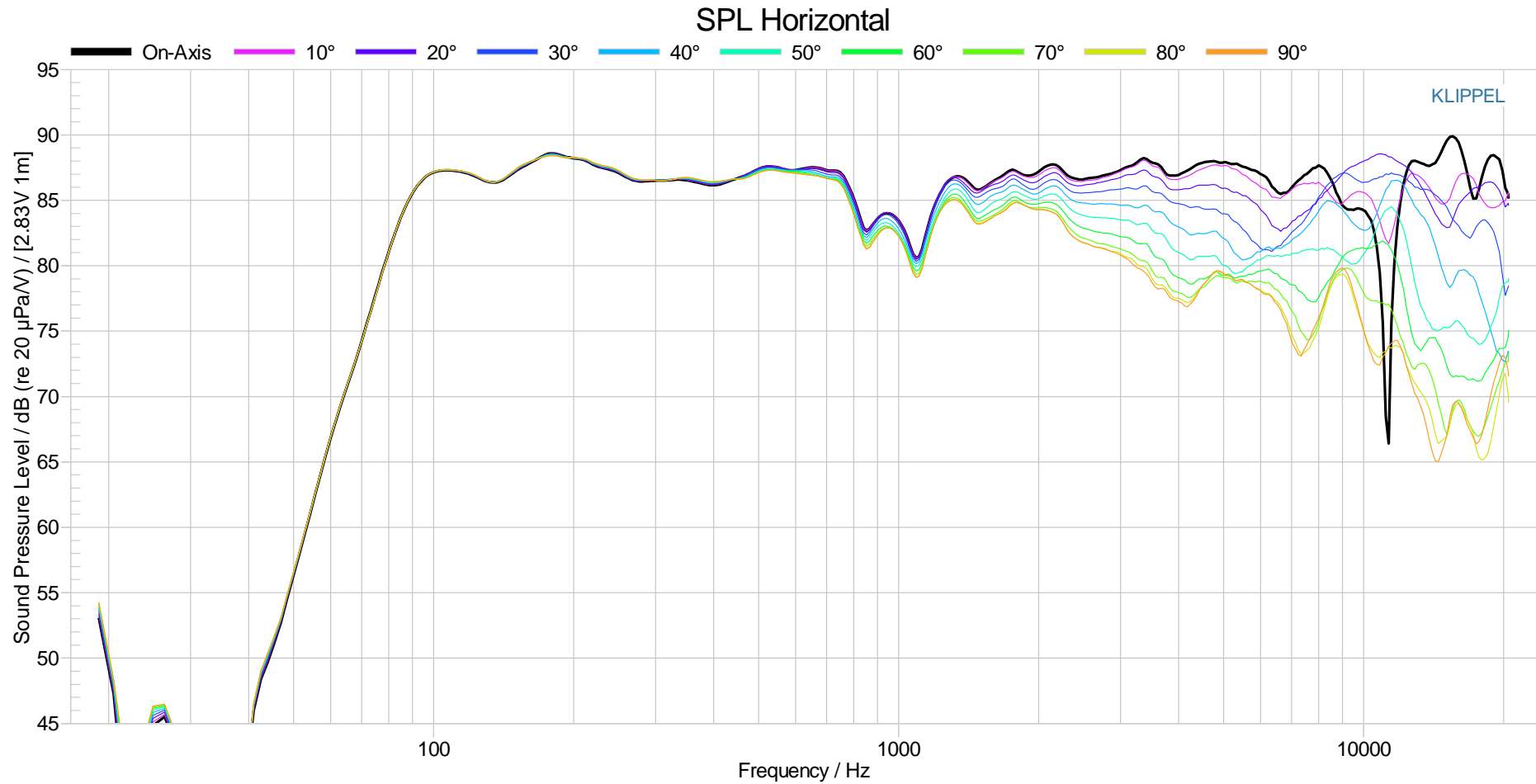
## 4.5. Vertical Reflections

*1/6 oct. Smoothing*



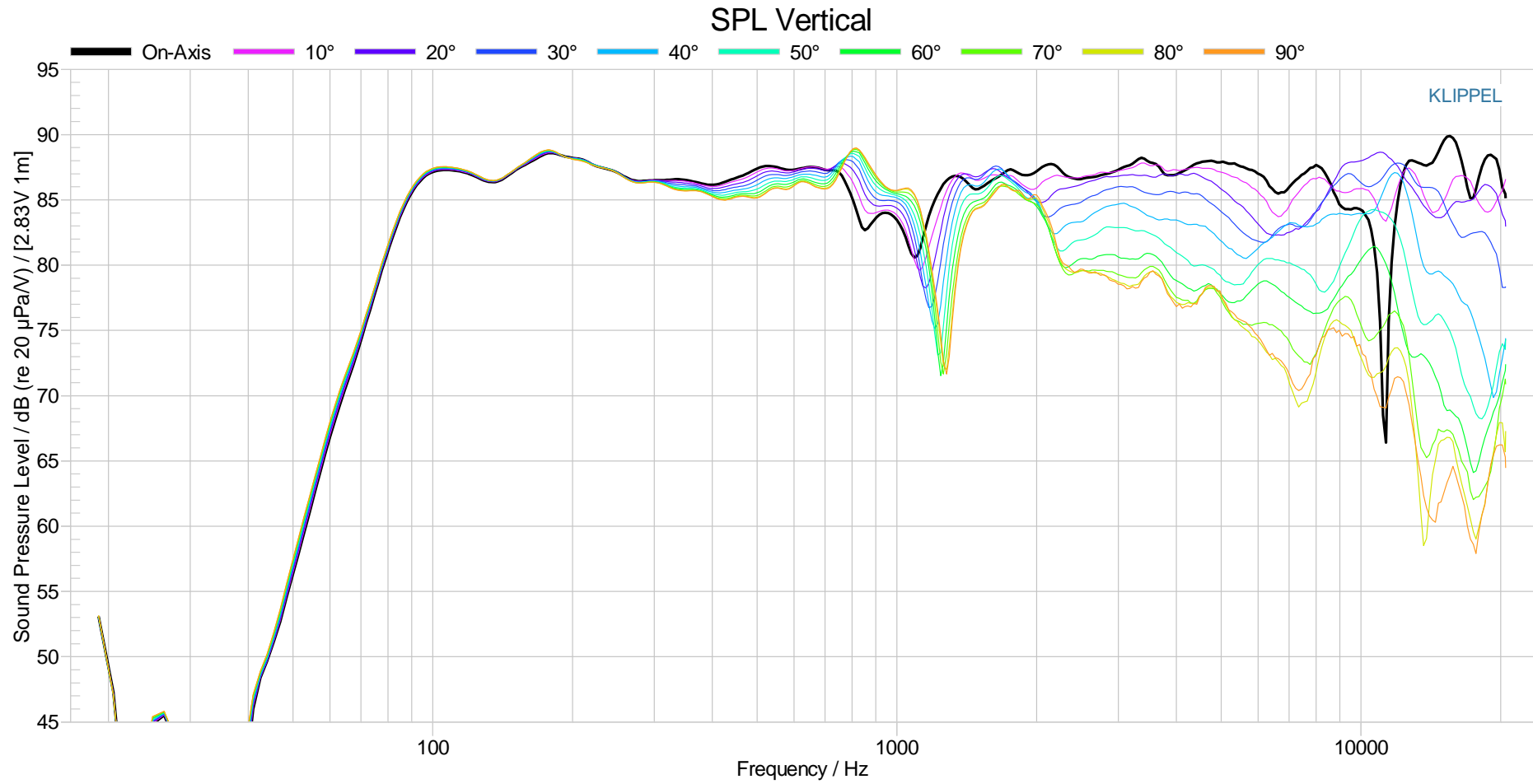
## 4.6. Horizontal Frequency Response

*1/6 oct. Smoothing*



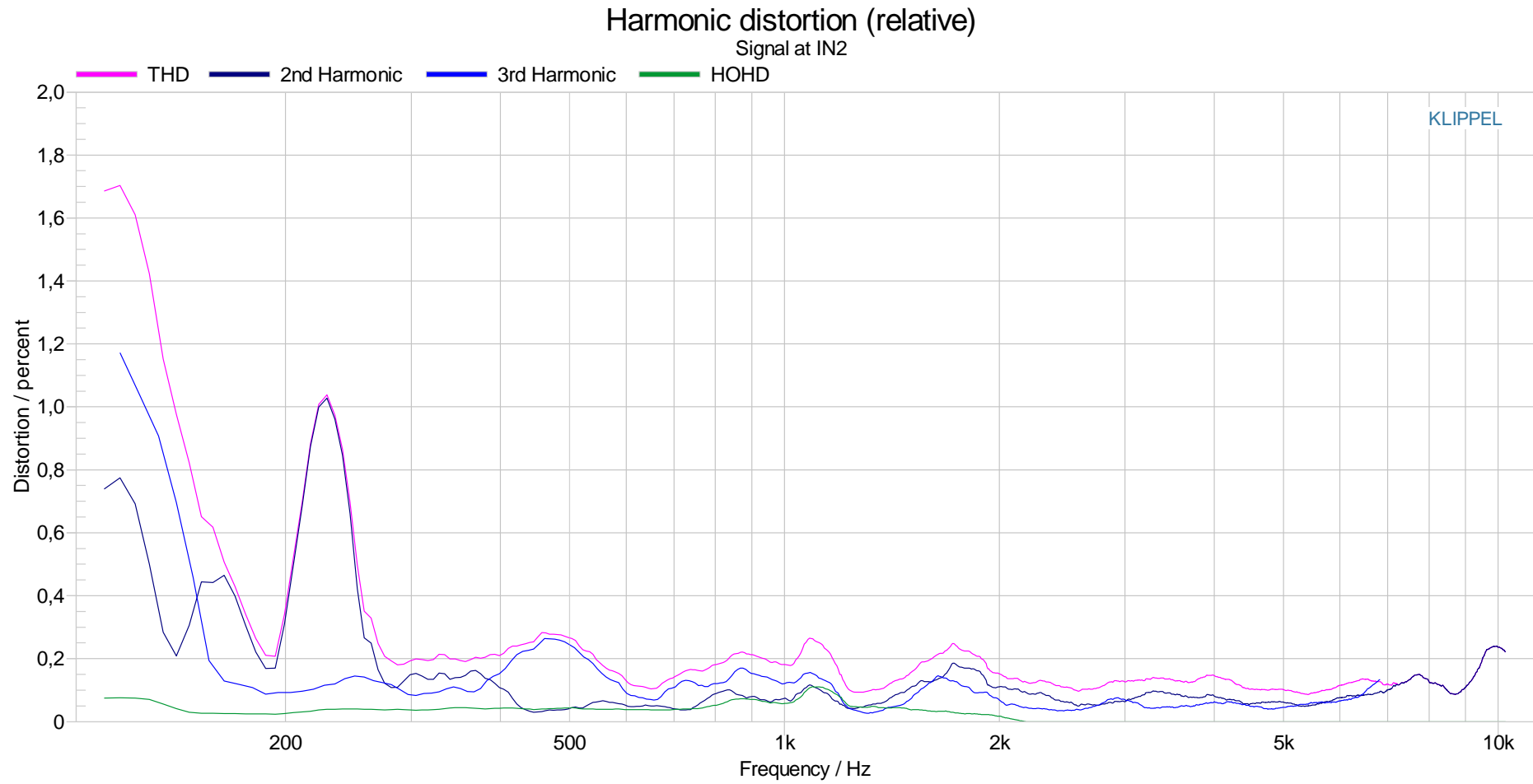
## 4.7. Vertical Frequency Response

*1/6 oct. Smoothing*



## 5. Harmonic Distortion

*1/6 oct. Smoothing – +7dBu Stimulus*



## 6. MTON Max SPL – 1s Stimulus

### 6.1. Results

#### Results of last passed measurement

Parameter	Value	Unit	Description
$U_{\max}$	0.45	V	Root mean square of stimulus.
$SPL_{\max}$	102.62	dB	Sum level of fundamentals in microphone signal.
$C_{\max}$	2.76	dB	Max compression in the frequency range 92 - 19945 Hz.
$MTD_{\max}$	-30.65	dB	Maximum multi-tone distortion of microphone signal relative to mean value.

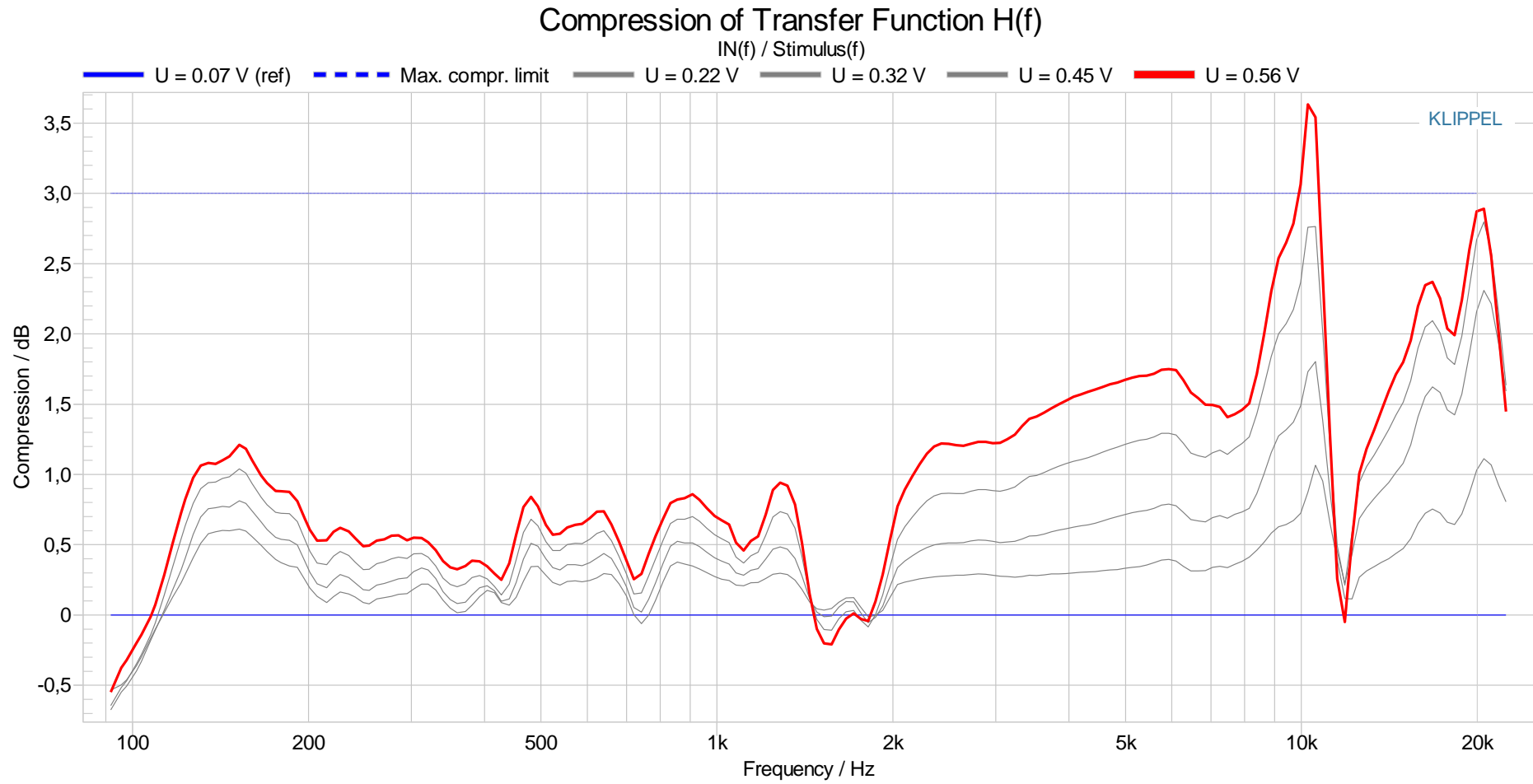
#### Stimulus properties

Parameter	Value	Unit	Description
$f_{\min}$	91.8	Hz	Lowest multi-tone frequency line
$f_{\max}$	22386.72	Hz	Highest multi-tone frequency line
$t$	0.51	s	Signal duration
$K$	3.02	-	Kurtosis
$C$	12.63	dB	Crest factor



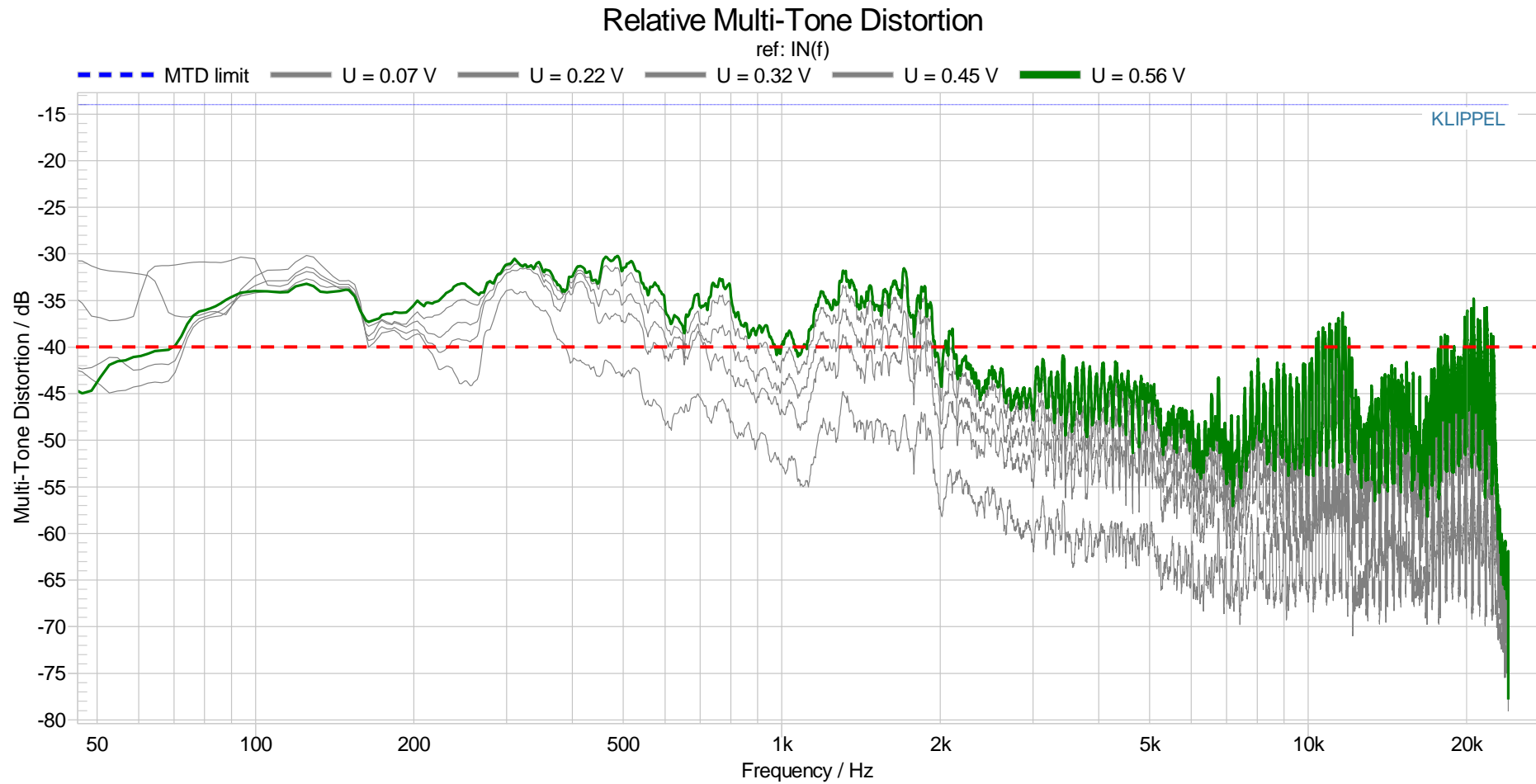
## 6.2. Compression Chart

-32dB Voltage Values – 1/6 Smoothing



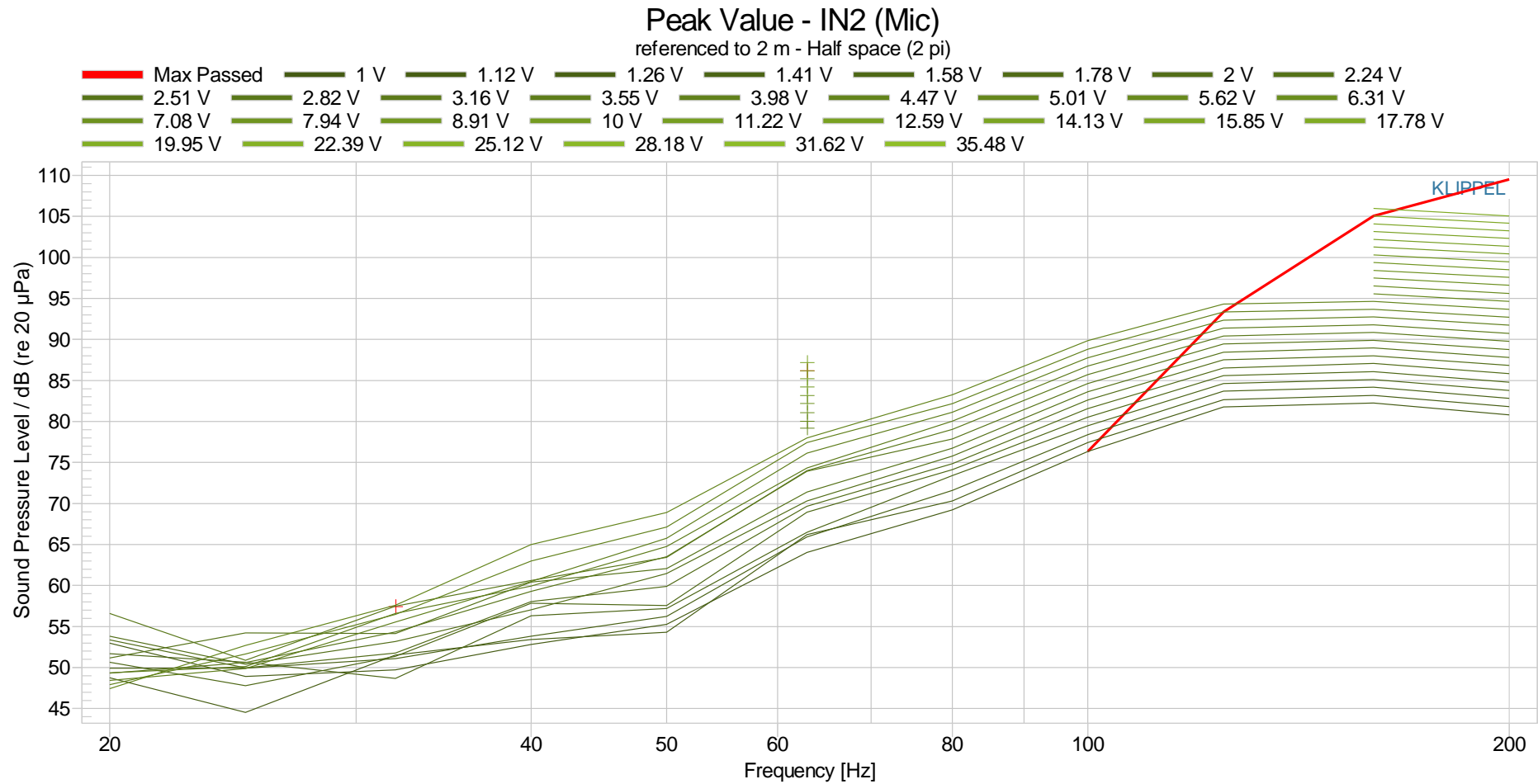
## 6.3. Multi Tone Distortion Chart

*-32dB Voltage Values – No Smoothing*



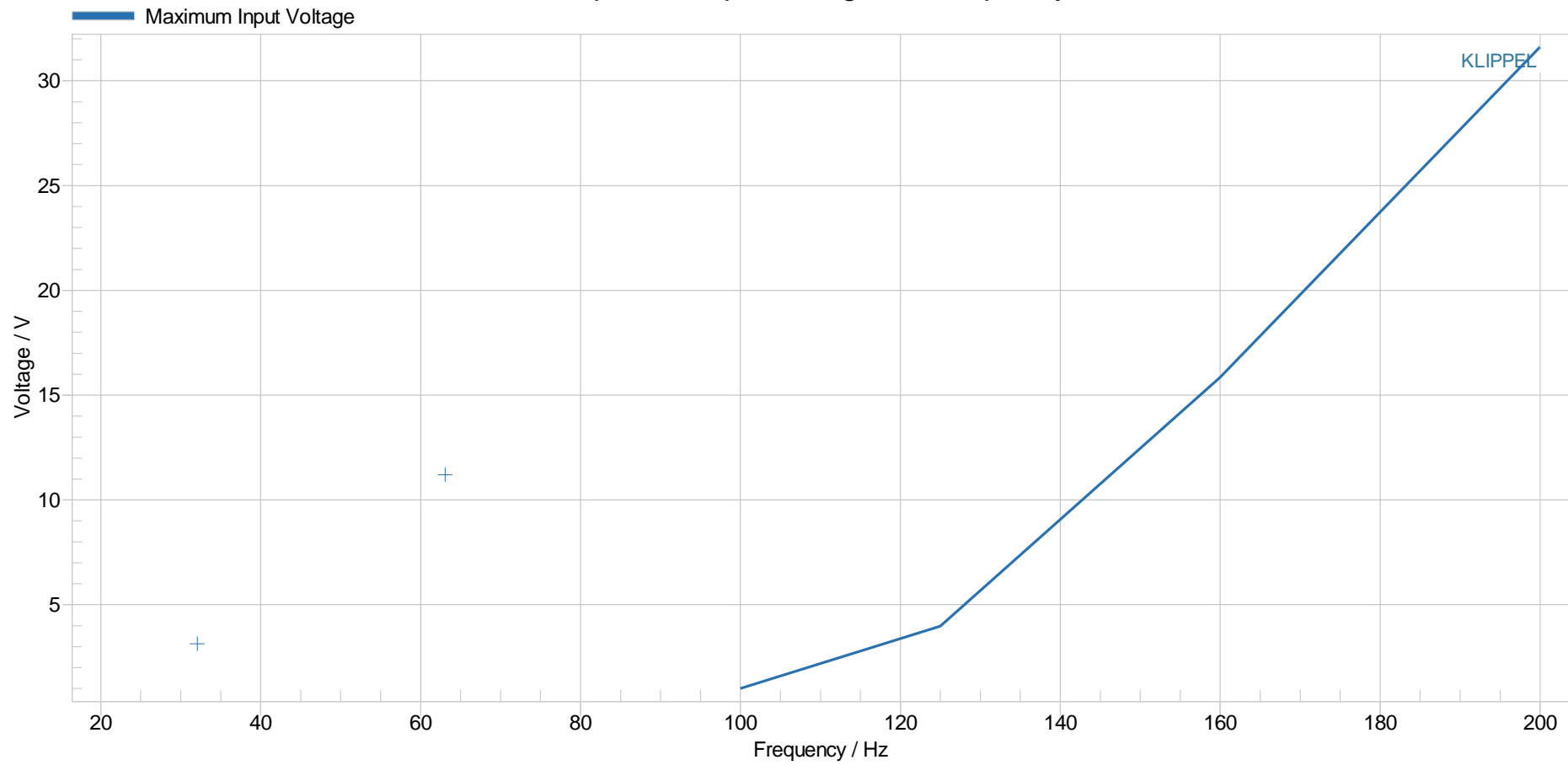
## 7. CEA2010B

### 7.1. Max Peak SPL



## 7.2. Max Peak Voltage

Maximum passed Input Voltage vs. Frequency Profile



### 7.3. THD on Burst

