

## Wom185\_vKi

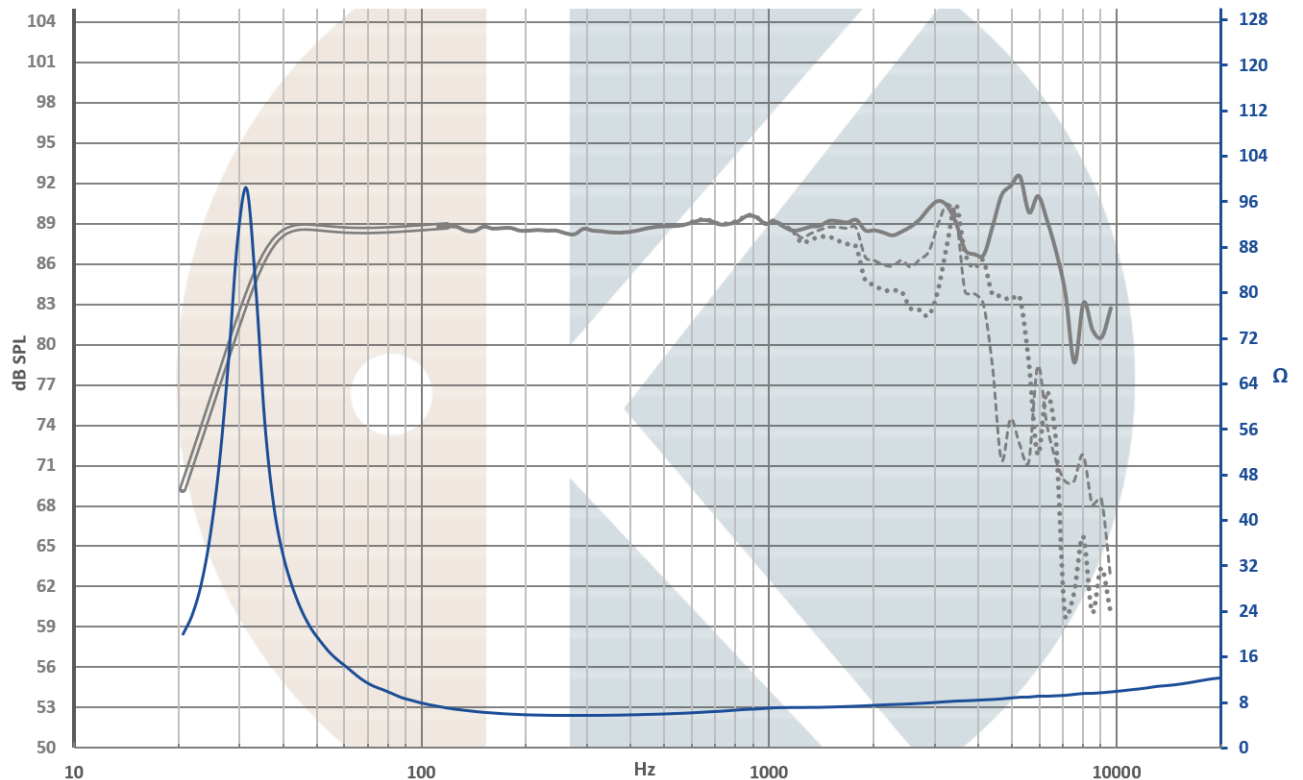
High-End woofer



**Wom185\_vKi is top of the art high-end woofer, engineered to reproduce the bandwidth from 35Hz to 2000Hz.**

- Very low dynamic compression (0.5dB max, from 30Hz to 1000Hz, with 95dB at 1m).
- Very low Inter Modulation Distortion.
- Very low Total Harmonic Distortion, including in low frequency.
- +/- 12mm pure linear excursion.
- Engineered and produced in France

### Frequency response and Impedance



On IEC baffle / Distance: 1m / Signal input: 2,83V / Dash curves: 25° & 50° / Smoothing: 1/12 Octave

Impedance measured in free air

Curve below 120Hz simulated in 30L vented enclosure / Tuning frequency: 35Hz

Datasheet for	Wom185_vKi	Notes	Kartesian products can be adapted to specific requirements and brand spirit. Each _vKi drivers is delivered with its QC report. <b>We continually improve our products, no contractual data.</b>	
Edition	2.2			
www.kartesian-acoustic.com				

## Detailed construction

### Membrane

hexaKone paper cone  
Large concave CGF dust cap

### Suspension

Tri-radius roll surround  
Low lost NBR surround material  
pumaX spider

### Voice coil:

Ø78.5mm, 1 layer, CCAW wire  
Vented Titanium / GF former

### Motor structure:

8x radial NdFeB magnets (grade N40H)  
8x Cooper struts + 2x Cooper rings  
2x Aluminium rings  
Optimized and vented pole pieces  
Low carbon steel

### Frame

Injected aluminium (ACD12)  
Vented spider

**Driver weight: 4.15Kgs**

## T&S parameters

Parameter	Unit	Value	Tolerance
<b>Fs</b>	Hz	32Hz	+/-2
<b>SPL</b>	dB/2.83V/1m	88.5	+/-0.2
<b>BI</b>	N/A	10.2	+/-0.08
<b>Mms</b>	g	33.5	+/-0.5
<b>Rms</b>	Kg/s	0.54	
<b>Le (at 1kHz)</b>	mH	0.1	+/-0.02
<b>Re</b>	Ω	5.1	+/-0.1
<b>Impedance</b>	Ω	8	
<b>Qms</b>		12	
<b>Qes</b>		0.33	
<b>Qts</b>		0.32	
<b>VAS</b>	L	33.6	
<b>Sd</b>	cm <sup>2</sup>	179	
<b>Mmd / Sd</b>	g/cm <sup>2</sup>	0.16	
<b>BI / Re</b>	T.m/Ω	2	

**Linear excursion: +/-12 mm**

Bl(x) deviation max: 10%

**Maximal excursion: +/-15mm**

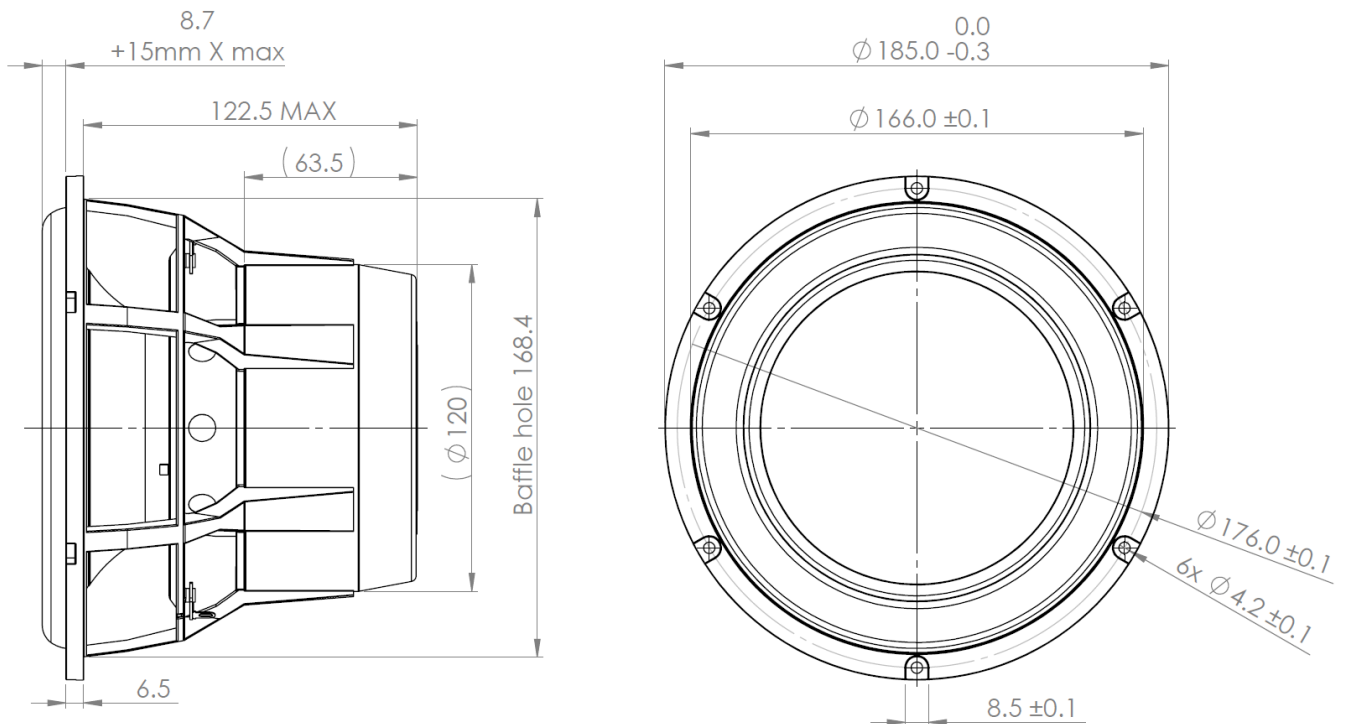
Bl(x) deviation max: 20%

**Maximal power handling: 250W**

(AES:2012 standard)

## Drawing

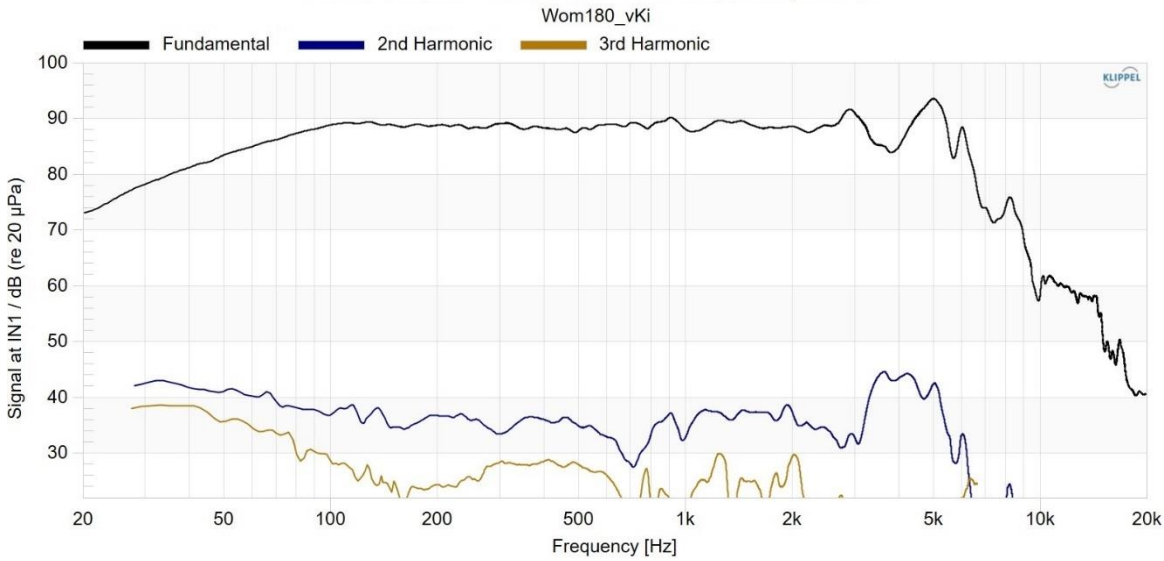
Unit: mm



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## Advanced measurements (1/2)

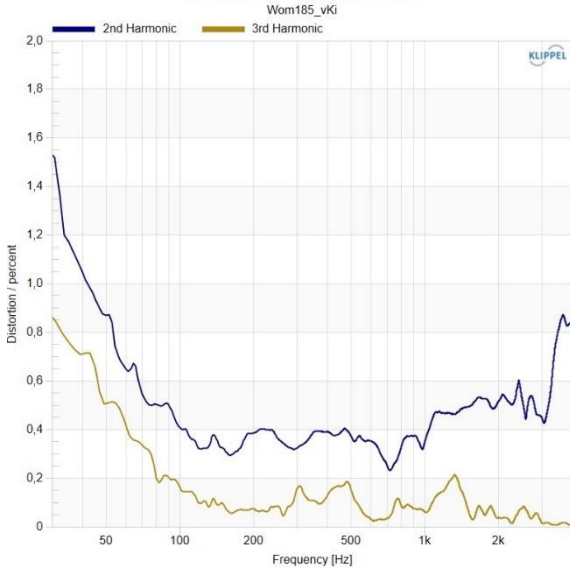
### Fundamental + Harmonic distortion components



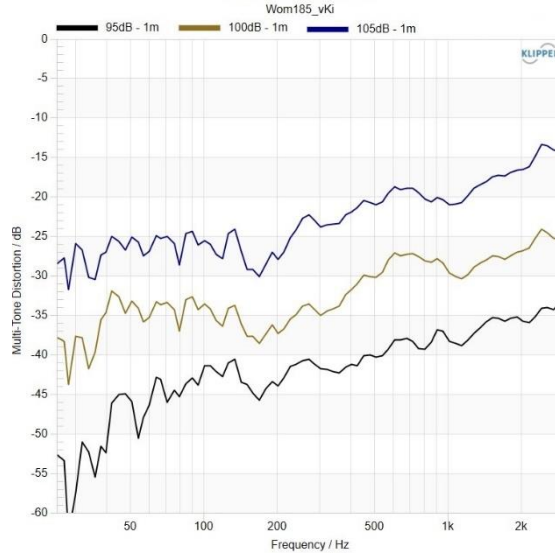
H2 – H3 for 2.83V

THD is mainly made of H2, with linear curve on the useful bandwidth.

### Relative H2 - H3 at 95dB/1m



### Multi-tone Distortion

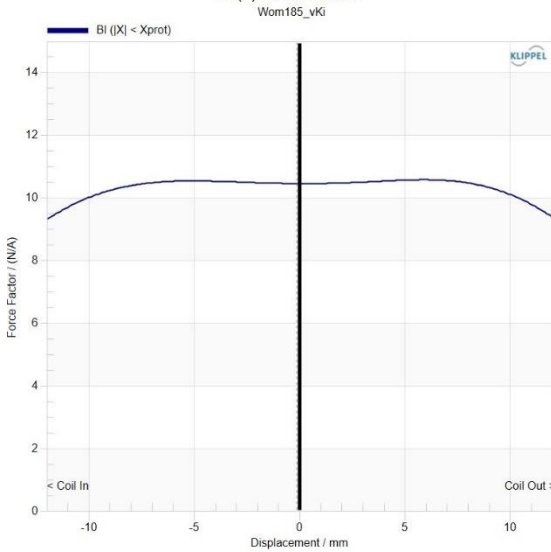


### Distortion details

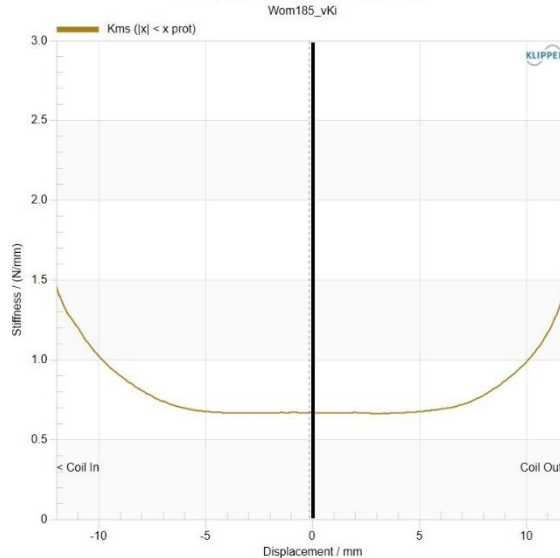
THD is lower than 2.5% at 30Hz when Wom185\_vKi is playing 95dB at 1m.

MD provides homogeneous curves, even at 105dB at 1m.

### Bl(x) Force Factor



### Kms(x) Stiffness of Suspension



### Linear excursion

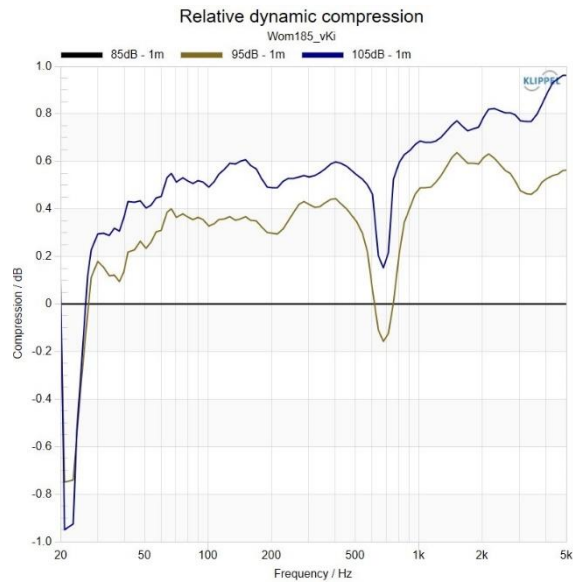
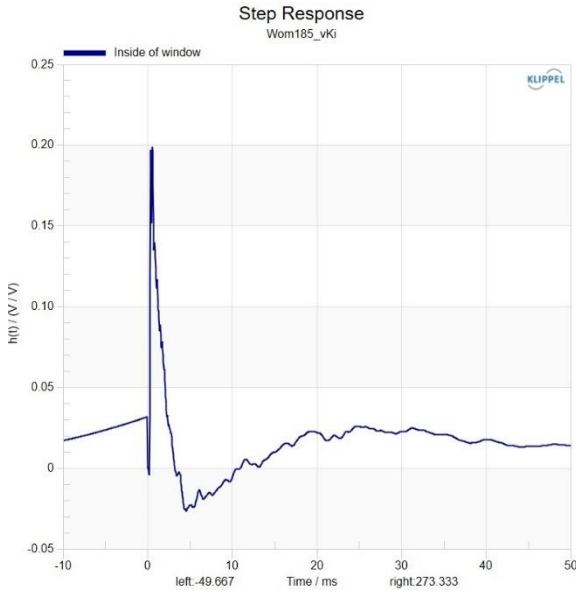
+/-12mm linear motion

Force factor remains stable with 90% accuracy on the full excursion.

Suspension stiffness ally Fs stability and progressive protection under highest cone excursion.

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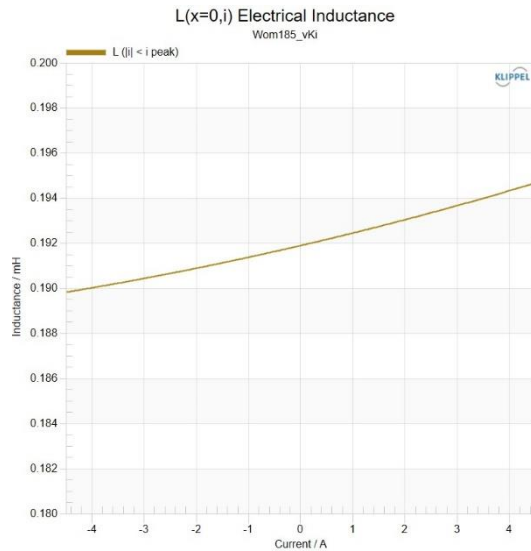
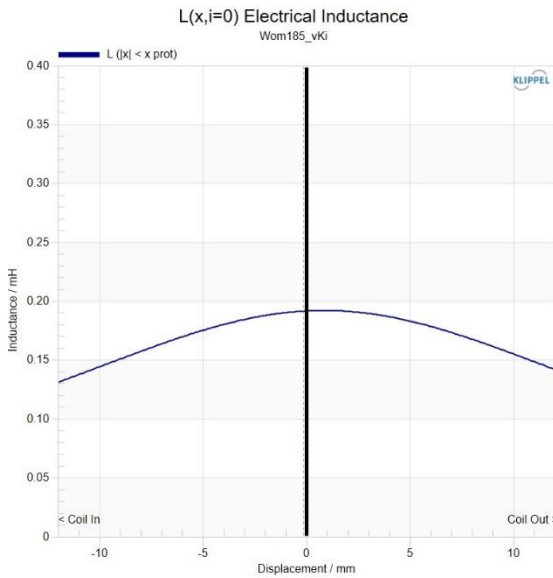
## Advanced measurements (2/2)



### Dynamic behavior

Step response shows fast transient and good damping.

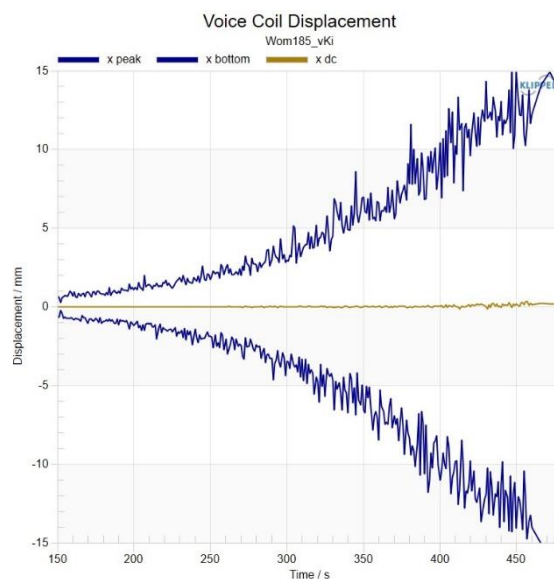
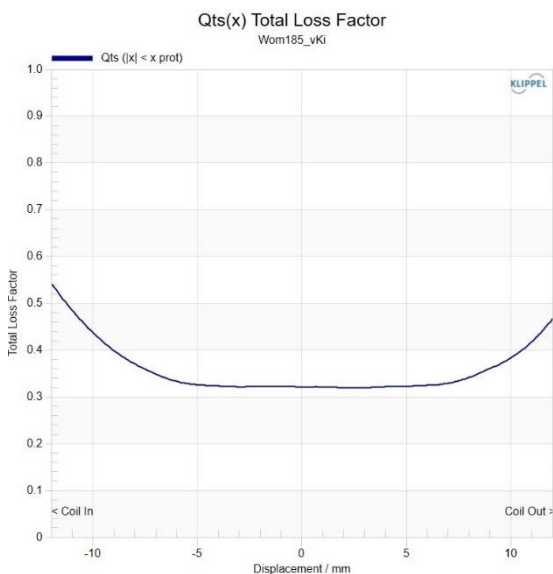
Dynamic compression is 1dB max on the useful band when Wom185\_vKi is playing 105dB at 1m.



### Inductance

$L_e = 0.1\text{mH}$  at 1kHz.  
Average 0.19mH at the rest position, on the band 20 – 3500Hz.  
Inductance variation over +/-12mm is 0.05mH.

Inductance variation according to current input is 0.05mH max with +/-4.5A consumed.



### Stability

Qts variation is symmetric and limited to 35% over +/-10mm excursion.

There isn't any significant offset over +/-15mm excursion

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