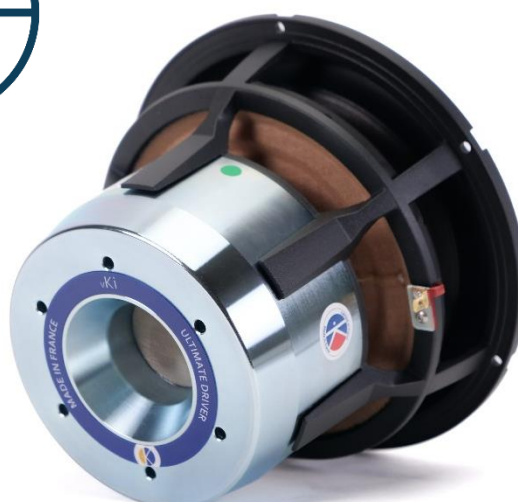


Sub185_vKi

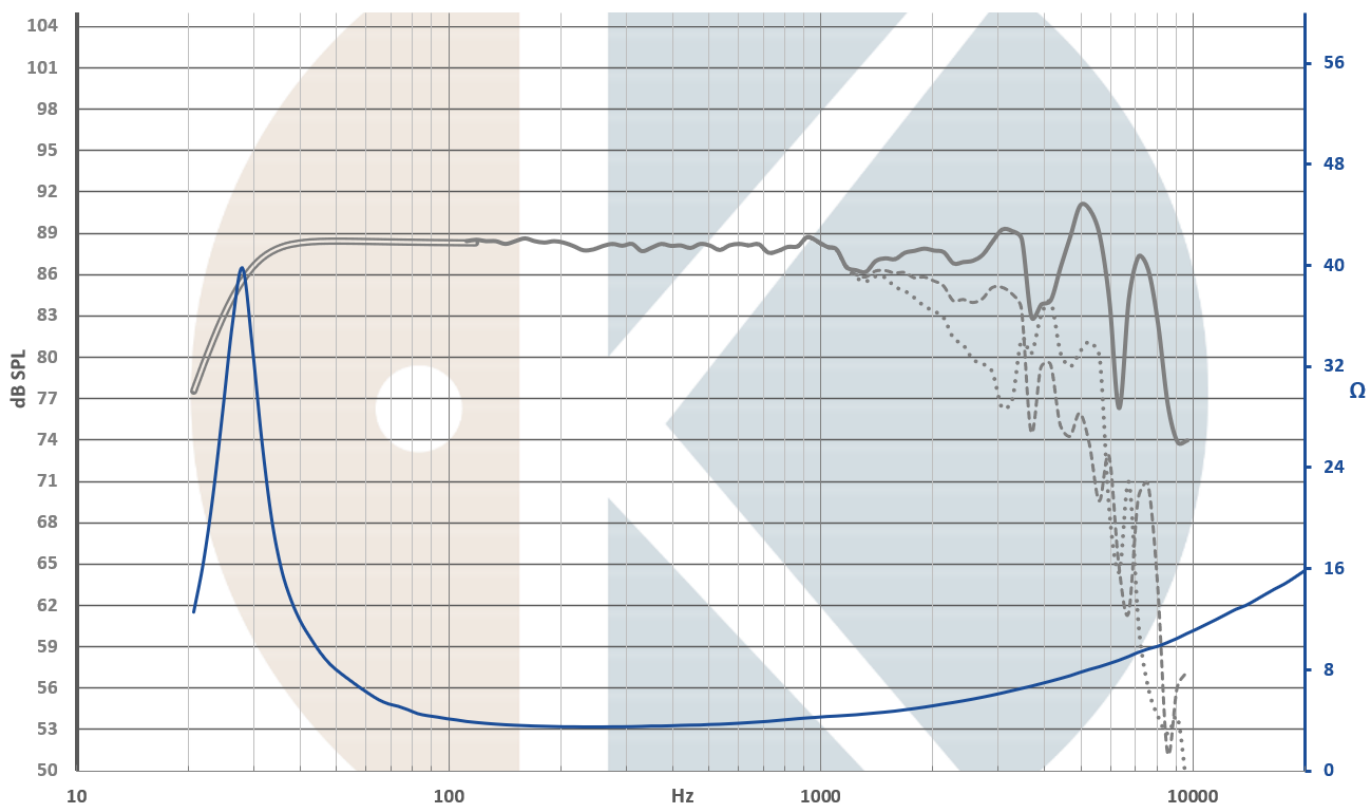
High-End Subwoofer



Sub185_vKi is top of the art high-end subwoofer, engineered to reproduce the bandwidth from 28Hz to 800Hz.

- Very low dynamic compression (0.3dB max, from 30Hz to 800Hz, with 95dB at 1m).
- Very low Inter Modulation Distortion.
- Very low Total Harmonic Distortion, especially in low frequency.
- +/- 15mm 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 35L vented enclosure / Tuning frequency: 28Hz

Datasheet for	Sub185_vKi	Notes	Kartesian products can be adapted to specific requirements and brand spirit. Each _vKi drivers is delivered with its QC report. We continually improve our products, no contractual data.	
Edition	2.4			
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
Dual spiders, vented spacer
progressive + dynamiK spiders

Voice coil:

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

Motor structure:

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

Frame

Injected aluminium (ACD12)
Vented spider

Driver weight: 4.2Kgs

T&S parameters

Parameter	Unit	Value	Tolerance
F_s	Hz	28Hz	+/-3
SPL	dB/2.83V/1m	88.5	+/-0.5
BI	N/A	6.92	+/-0.08
M_{ms}	g	38	+/-2
R_{ms}	Kg/s	1.39	
Le (at 1kHz)	mH	0.19	+/-0.05
Re	Ω	3.2	+/-0.1
Impedance	Ω	4	
Q_{ms}		4.8	
Q_{es}		0.45	
Q_{ts}		0.41	
VAS	L	38.6	
S_d	cm ²	179	
M_{md} / S_d	g/cm ²	0.2	
BI / Re	T.m/Ω	2.16	

Linear excursion: +/-15 mm

BI(x) deviation max: 10%

Maximal excursion: +/-18mm

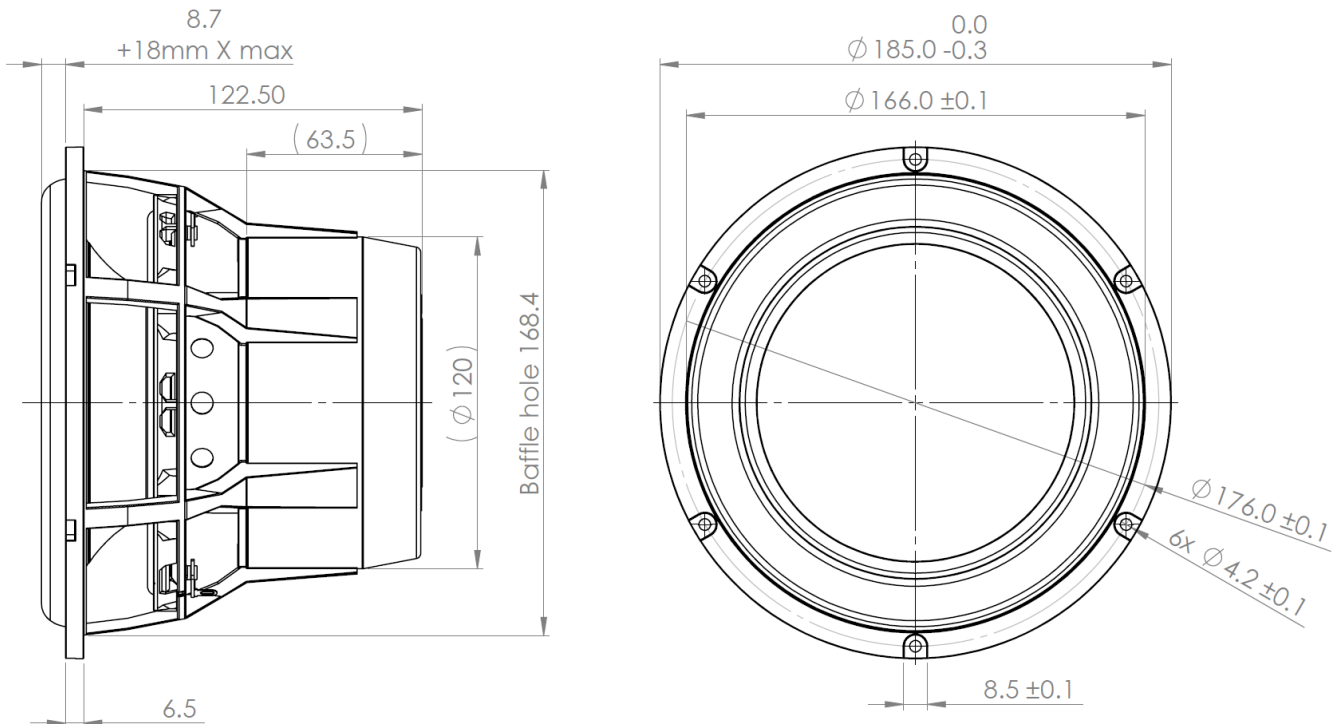
BI(x) deviation max: 20%

Maximal power handling: 250W

(AES:2012 standard)

Drawing

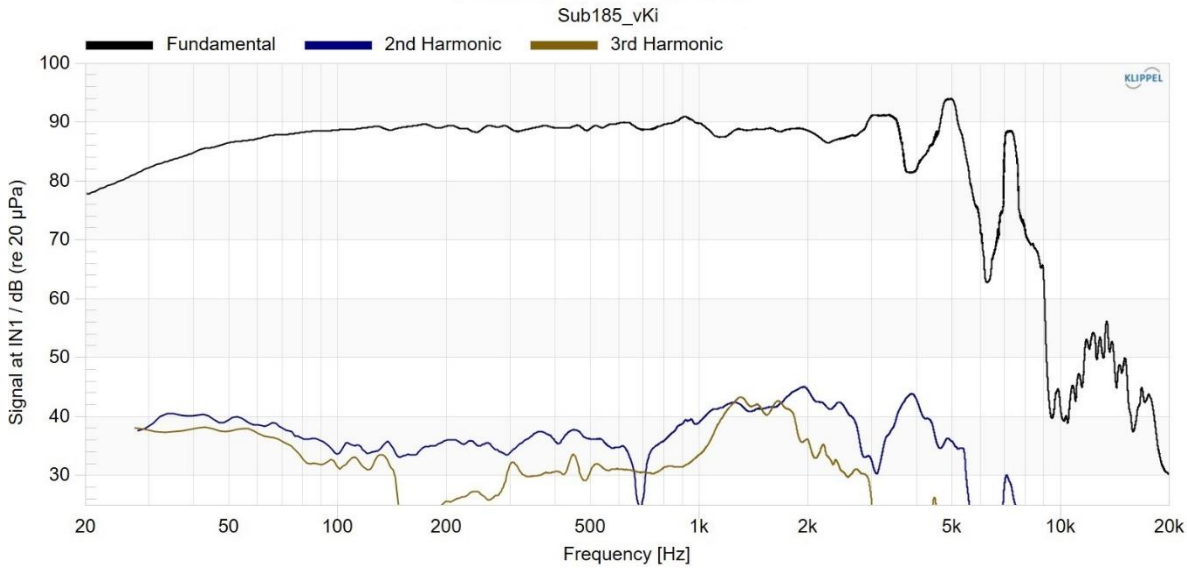
Unit: mm



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Advanced measurements (1/2)

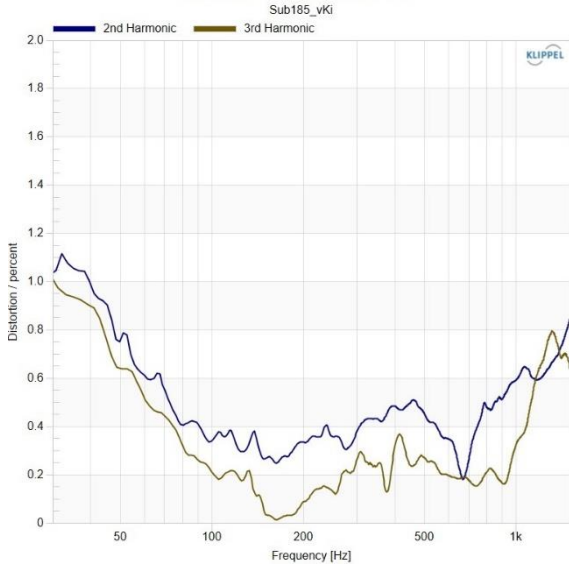
Fundamental + H2 & H3



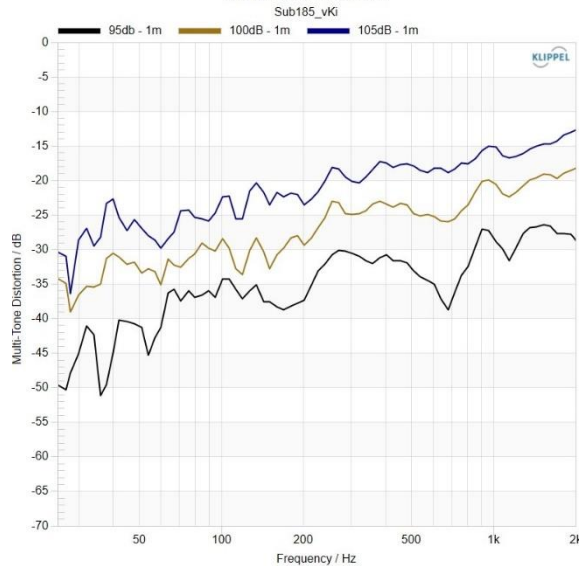
H2 – H3 for 2.83V

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

Relative H2 - H3 at 95dB/1m



Multi-tone Distortion

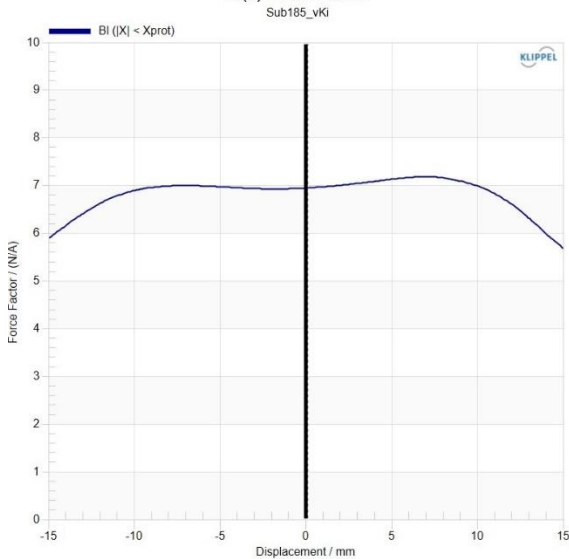


Distortion details

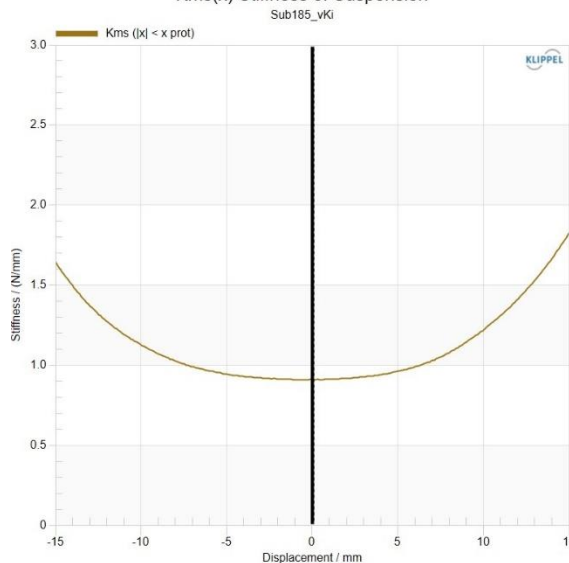
THD is lower than 1.5% at 40Hz when Sub185_vKi is playing 95dB at 1m.

Very low MD in low frequency, even at 105dB at 1m.

Bl(x) Force Factor



Kms(x) Stiffness of Suspension



Linear excursion

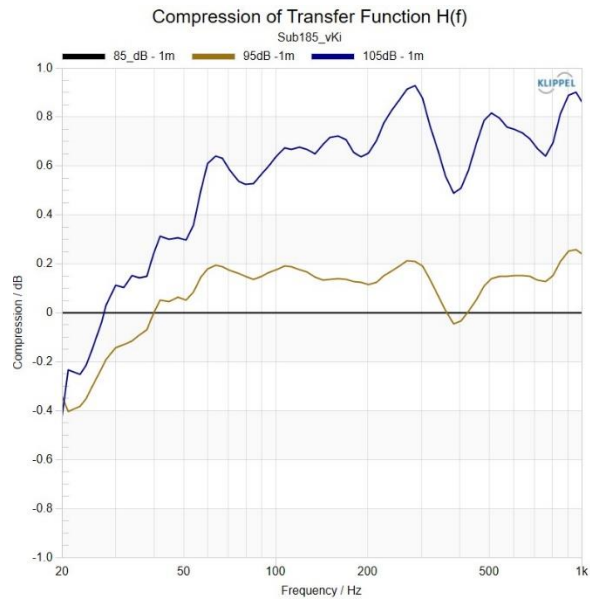
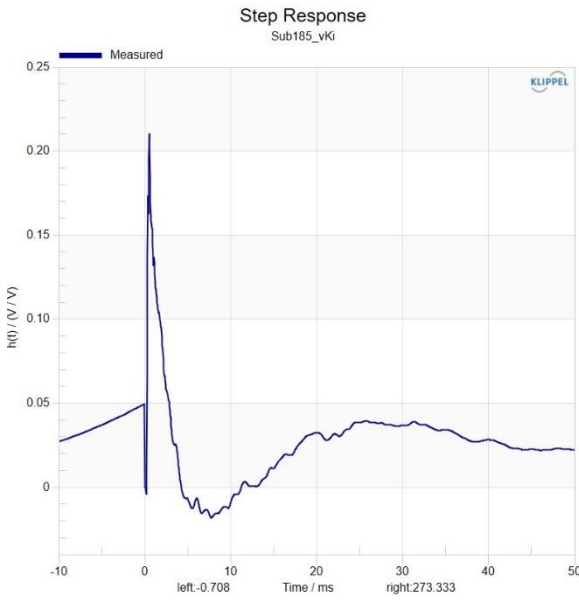
+/-15mm linear motion

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

Suspension stiffness increase smoothly to ensure soft Fs variation and protection the driver under highest excursion.

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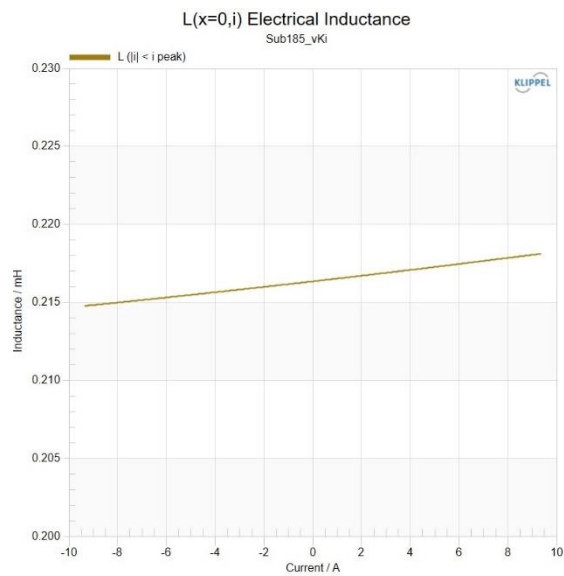
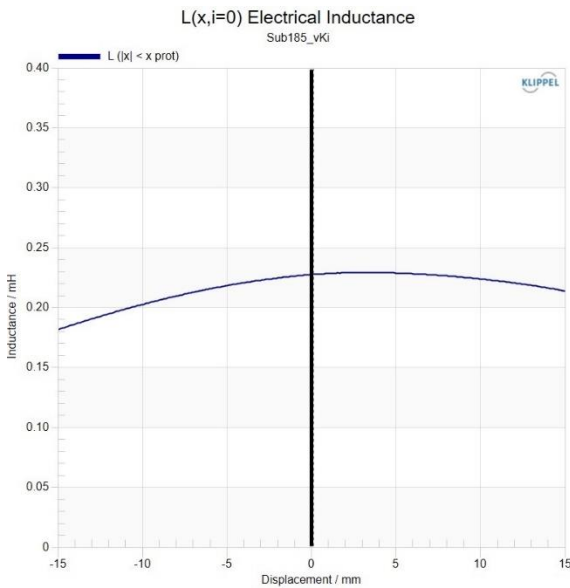
Advanced measurements (2/2)



Dynamic behavior

Step response shows fast transient and good damping.

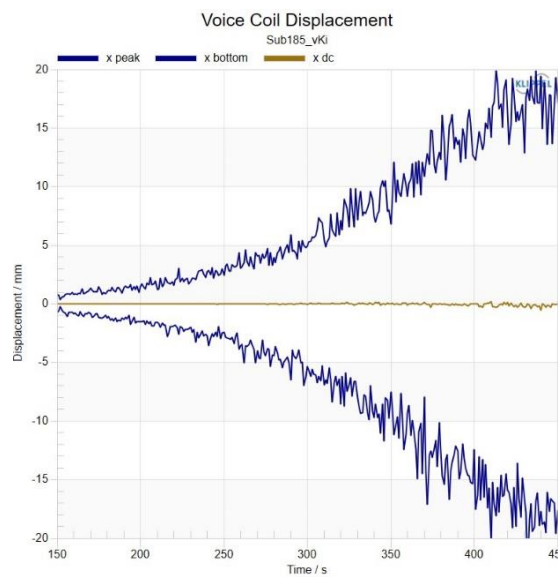
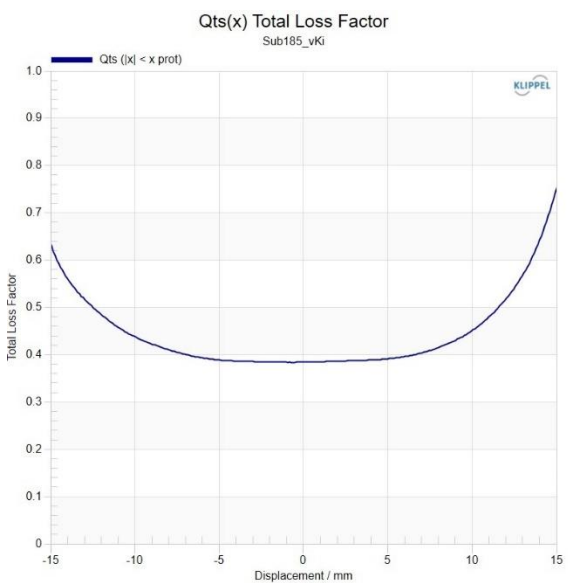
Dynamic compression is 1dB max on the useful band when Sub185_vKi is playing 105dB at 1m.



Inductance

$L_e = 0.19\text{mH}$ at 1kHz.
Average 0.23mH at the rest position, on the band 20 – 3500Hz.
Inductance variation over $\pm 15\text{mm}$ is 0.05mH .

Inductance variation according to current input is 0.04mH max with $\pm 9.5\text{A}$ consumed.



Stability

Q_{ts} variation is symmetric and limited to 30% over $\pm 12\text{mm}$ excursion.

There isn't any significant offset over $\pm 20\text{mm}$ excursion

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