

Sub265_vKi-S

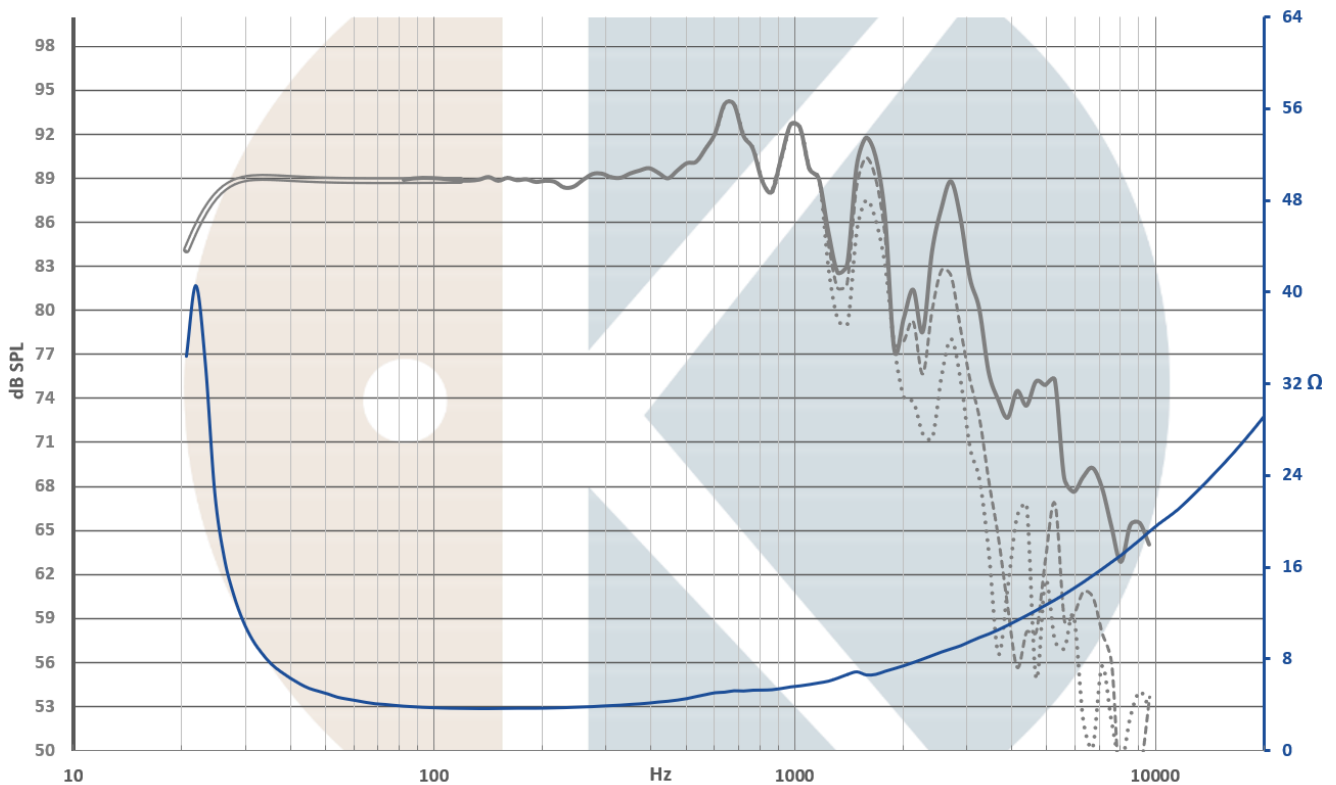
High-End Subwoofer



Sub265_vKi-S is top of the art high-end subwoofer, engineered to reproduce 25Hz to 500Hz in sealed enclosure.

- Very low dynamic compression (0.5dB max, from below 100Hz, with 105dB at 1m).
- Very low Inter Modulation Distortion.
- Very low Total Harmonic Distortion, especially in low frequency (below 1.5% with 95dB output).
- +/- 16mm 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 40L sealed enclosure / EQ +8dB at 25Hz - Q2.2 & -2dB at 65Hz - Q1

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Edition	1.5			
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Detailed construction

Membrane

4 layers - vented paper cone
Large concave CGF dust cap

Suspension

Tri-radius roll surround
Surround with radial reinforcements
Low lost NBR surround material
Dual spiders, vented spacers
progressive + pumaX spiders

Voice coil:

Ø78.5mm, 1 layer, Cu ribbon 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: 4.92Kgs

T&S parameters

Parameter	Unit	Value	Tolerance
F_s	Hz	22Hz	+/-3
SPL	dB/2.83V/1m	89.5	+/-0.5
BI	N/A	9.08	+/-0.1
M_{ms}	g	82	+/-2
R_{ms}	Kg/s	1.49	
Le (at 1kHz)	mH	0.32	+/-0.08
Re	Ω	3.4	+/-0.15
Impedance	Ω	4	
Q_{ms}		7.6	
Q_{es}		0.47	
Q_{ts}		0.44	
VAS	L	108.4	
S_d	cm ²	346	
M_{md} / S_d	g/cm ²	0.216	
BI / Re	T.m/Ω	2.67	

Linear excursion: +/-16 mm

BI(x) deviation max: 12%

Maximal excursion: +/-18mm

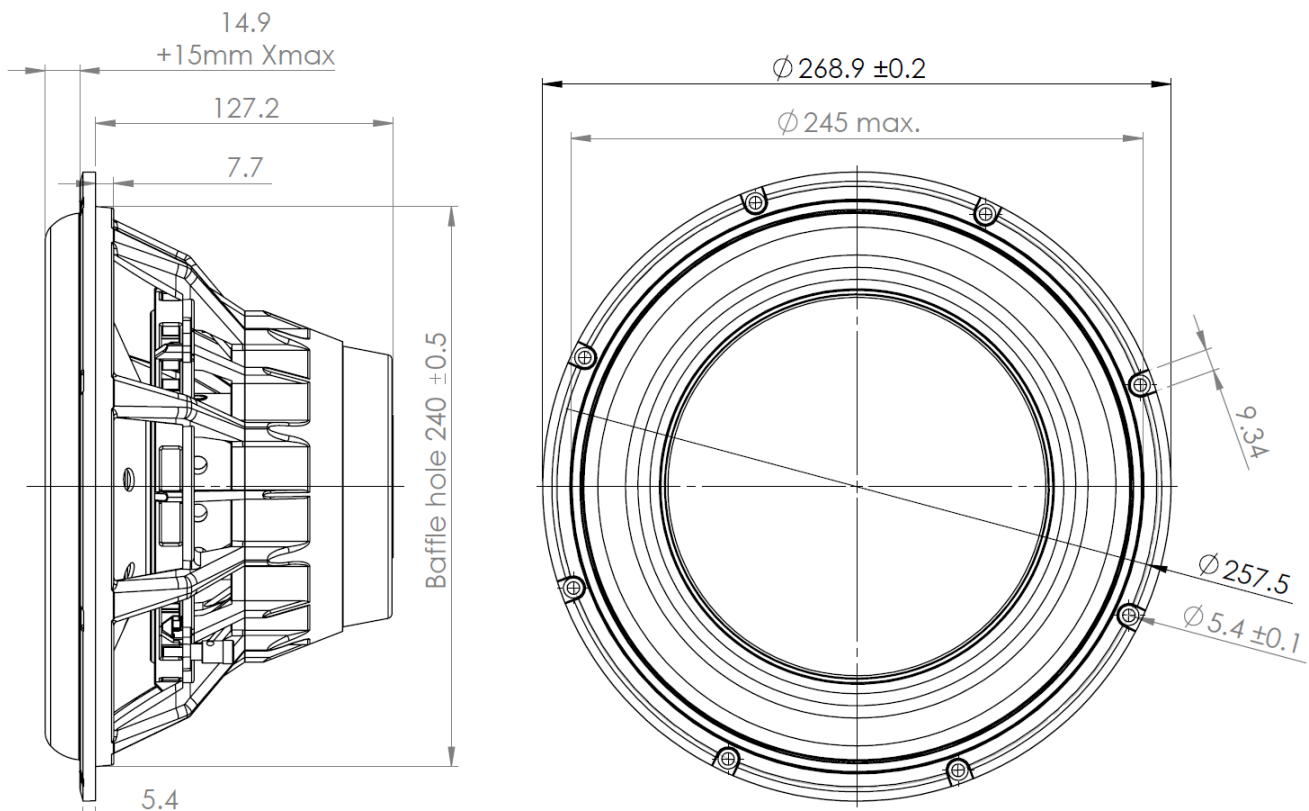
BI(x) deviation max: 20%

Maximal power handling: 500W

(AES:2012 standard)

Drawing

Unit: mm

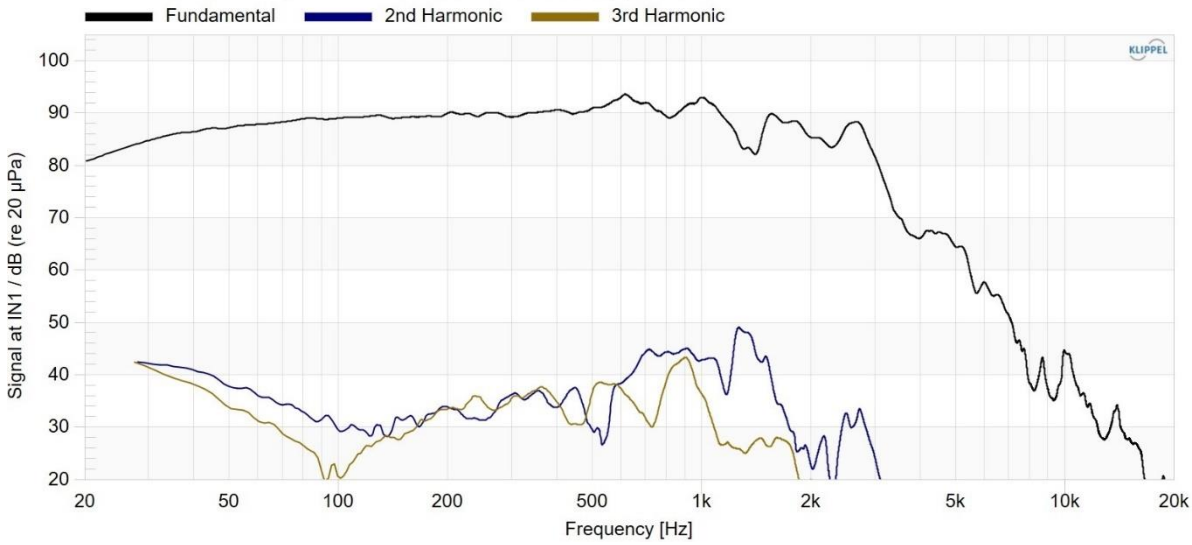


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Advanced measurements (1/2)

Fundamental + H2 & H3

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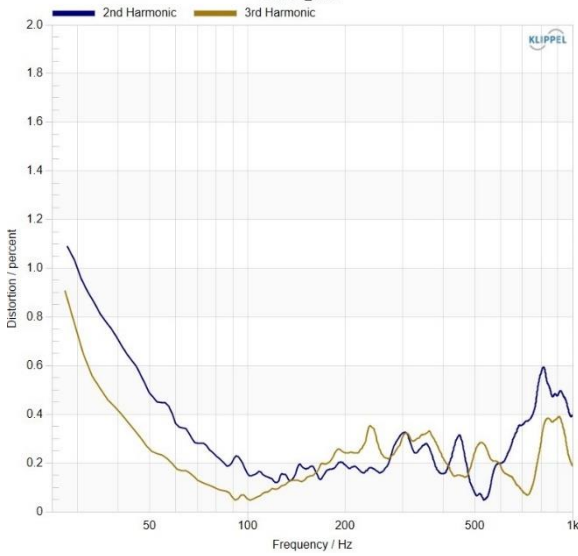


H2 – H3 for 2.83V

Very low THD in low frequency (advised up-to 500Hz).

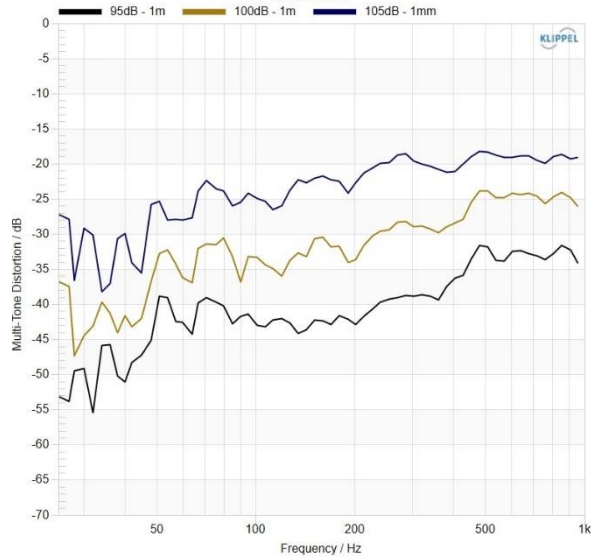
Relative H2 - H3 at 95dB/1m

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Multi-tone Distortion

Sub265_vKi-S



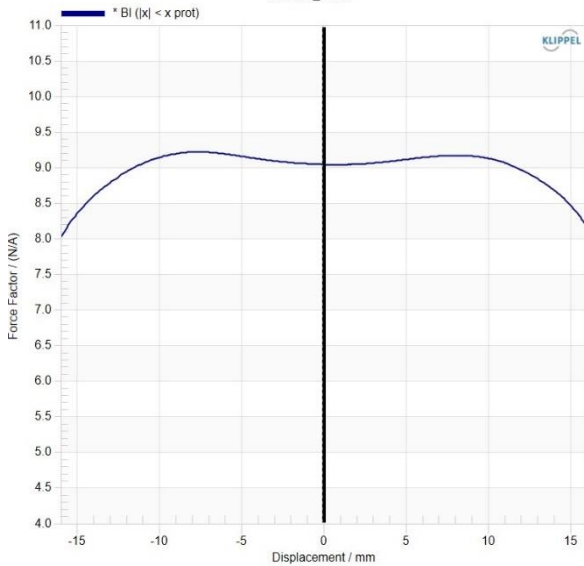
Distortion details

THD is lower than 1% at 40Hz when Sub265_vKi-S is playing 95dB at 1m.

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

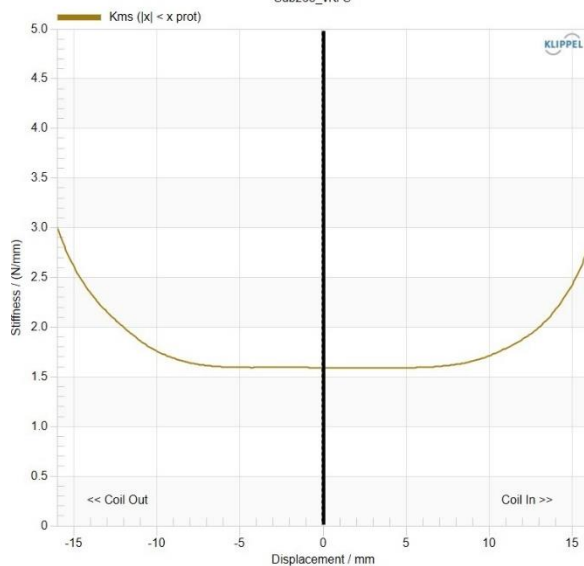
Bl(x) Force Factor

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Kms(x) Stiffness of Suspension

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Linear excursion

+/-16mm linear motion with Bl(x) curve shape suitable to Kms(x)

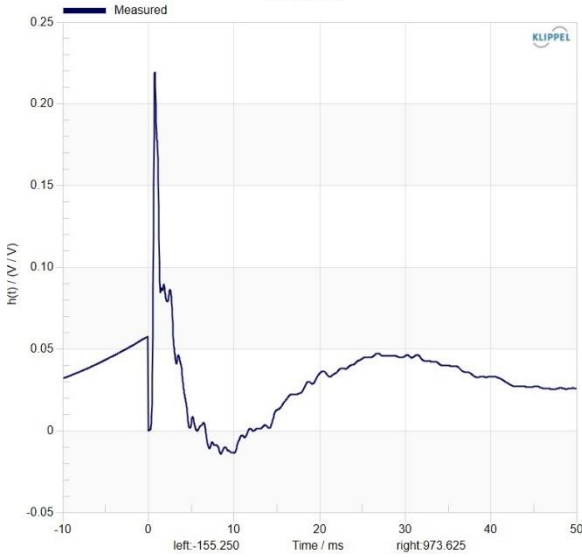
Force factor remains stable with 90% accuracy on the full excursion.

Suspension stiffness increase smoothly to ensure soft Fs variation

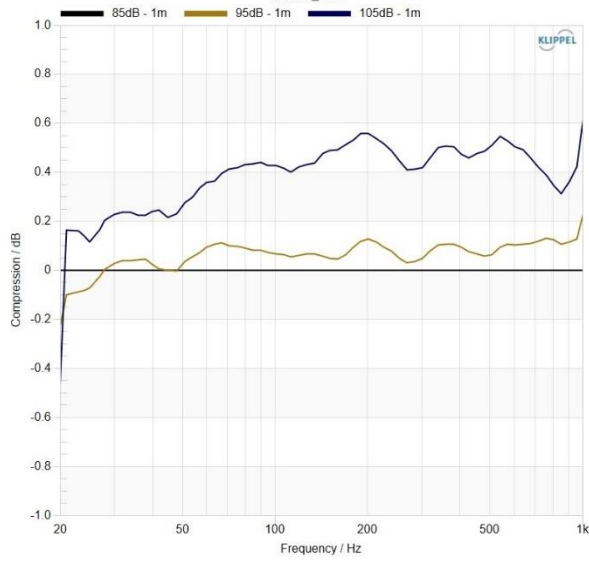
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Advanced measurements (2/2)

Step Response
Sub265_vKi-S



Compression of Transfer Function H(f)
Sub265_vKi-S

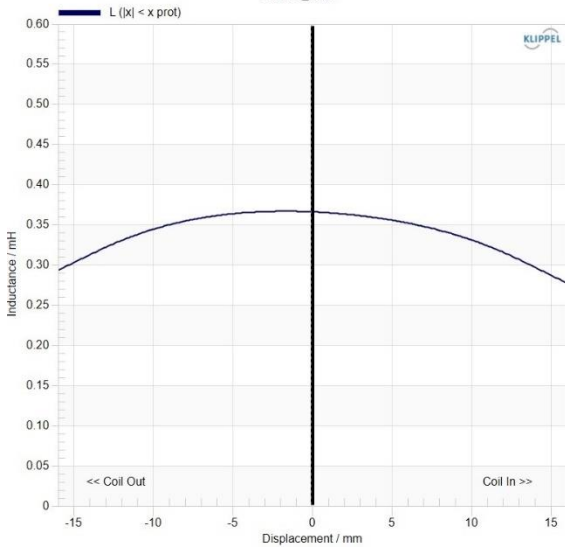


Dynamic behavior

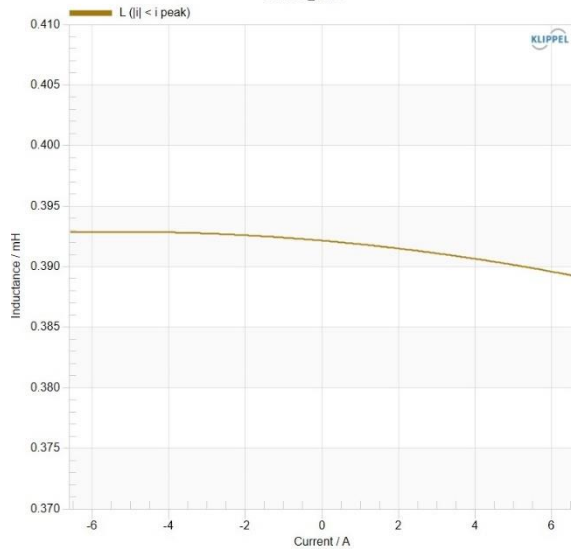
Step response shows fast transient and good damping.

Dynamic compression is 0.5dB max below 100Hz when Sub265_vKi-S is playing 105dB at 1m.

$L(x, i=0)$ Electrical Inductance
Sub265_vKi-S



$L(x=0, i)$ Electrical Inductance
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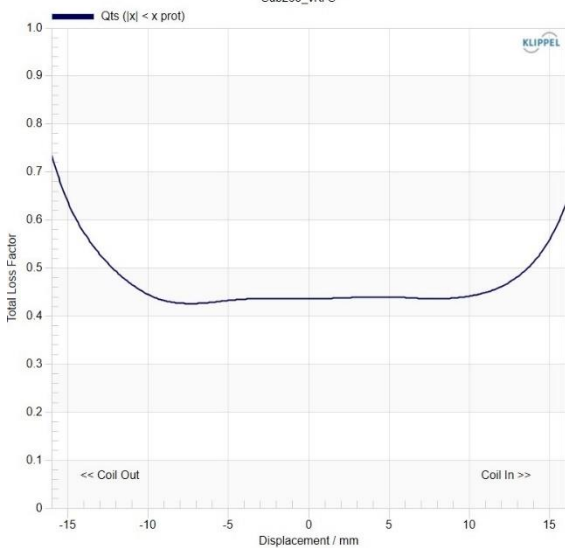


Inductance

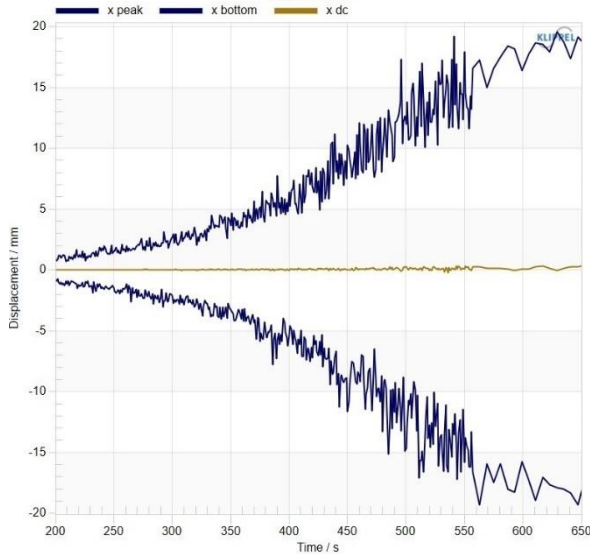
$L_e = 0.32\text{mH}$ at 1kHz.
Average 0.37mH at the rest position, on the band 20 – 2000Hz.
Inductance variation over +/-17mm is 0.07mH.

Inductance variation according to current input is 0.05mH max with +/-6.5A consumed.

$Q_{ts}(x)$ Total Loss Factor
Sub265_vKi-S



Voice Coil Displacement
Sub265_vKi-S



Stability

Q_{ts} variation is symmetric and limited to 30% over +/-14mm excursion.

There isn't any significant offset over +/-20mm excursion

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