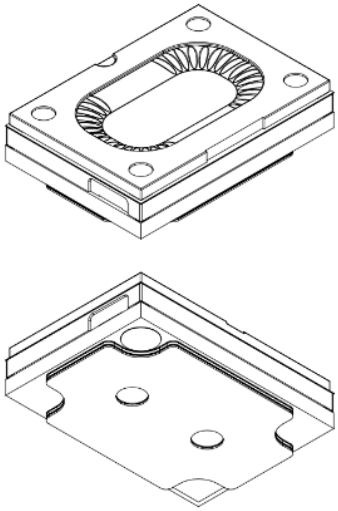


MEMS-based micro-speaker for headphones, wearables and array applications

Features

- Small form factor
- High flexibility for acoustic system integration
- Low heat generation
- No magnetic field
- High input impedance suitable for thin wires or PCB traces

Description

Achelous is a MEMS-based micro-speaker for occluded-ear headphones, and can also be used as micro-tweeter for wearables and array applications

Test conditions

Measured with IEC 60318-4 coupler	
Coupler type	IEC 60318-4 (711)
Coupler Volume	1.4cm³
Connection tube length	1.6mm
Connection tube diameter	3.7mm

Microphone	GRAS 43AC
Microphone Amplifier	B&K Nexus
Loudspeaker Amplifier	G.R.A.S. 12AU
Measurement System	APx 526

Measurement Signal	Exp. Sweep
Frequency Range (Audio)	10Hz - 20kHz
Frequency Range (Ultrasound)	20kHz - 80kHz
Voltage levels (Audio)	
V_{dc}	15V
V_{ac}	15Vp
Voltage levels (Ultrasound)	
V_{dc}	15V
V_{ac}	5Vp

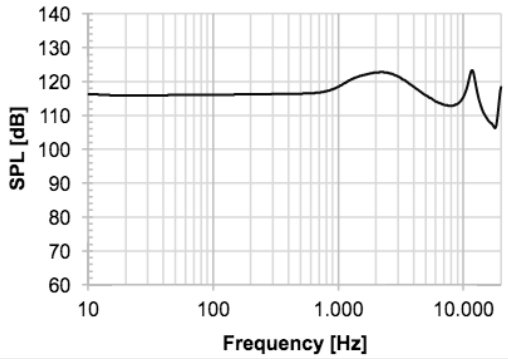
Measured with IEC 60268-5 baffle	
Baffle type	IEC 60268-5
Mic distance	3cm
Reference distance	10cm

Microphone	GRAS 46AC
Microphone diameter	1/2"
Microphone Amplifier	B&K Nexus
Loudspeaker Amplifier	G.R.A.S. 12AU
Measurement System	APx 526

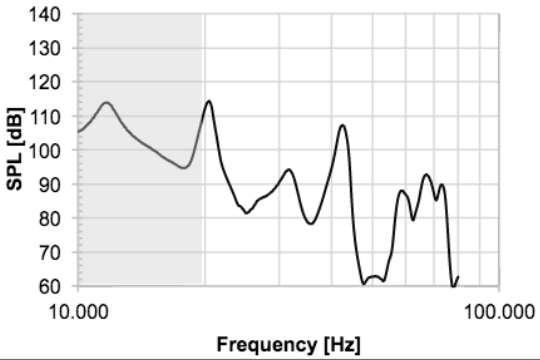
Measurement Signal	Exp. Sweep
Frequency Range (Audio)	1kHz - 20kHz
Frequency Range (Ultrasound)	20kHz - 80kHz
Voltage levels (Audio)	
V_{dc}	15V
V_{ac}	15Vp
Voltage levels (Ultrasound)	
V_{dc}	15V
V_{ac}	5Vp

Acoustic parameters IEC 60318-4 coupler

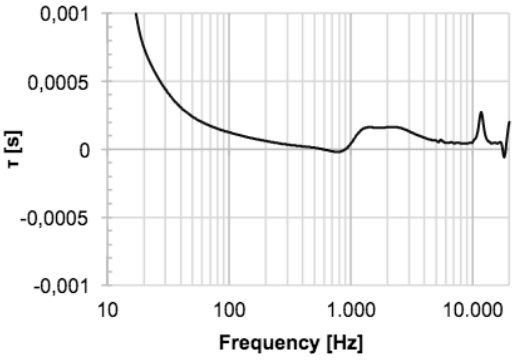
SPL (@15Vp drive)
Audio Range (10Hz-20kHz)



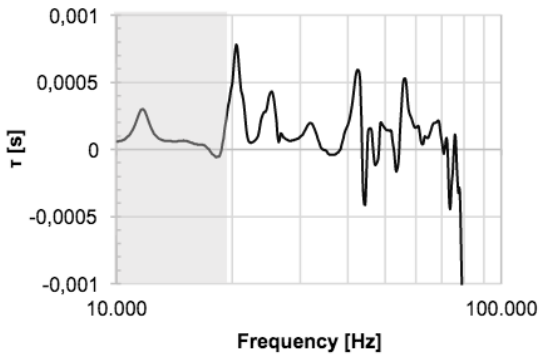
SPL (@5Vp drive)
Ultrasound Range (20kHz-80kHz)



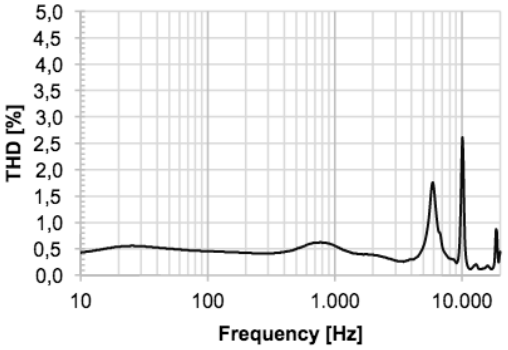
Group Delay
Audio Range (10Hz-20kHz)



Group Delay
Ultrasound Range (20kHz-80kHz)

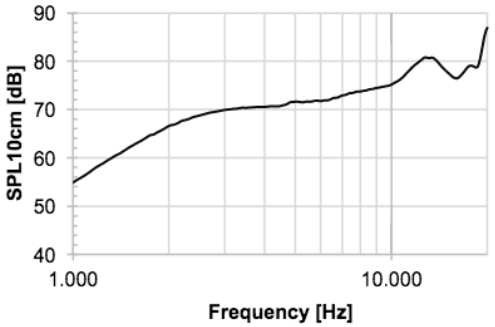


THD (94dB SPL @1kHz)
Audio Range (10Hz-20kHz)

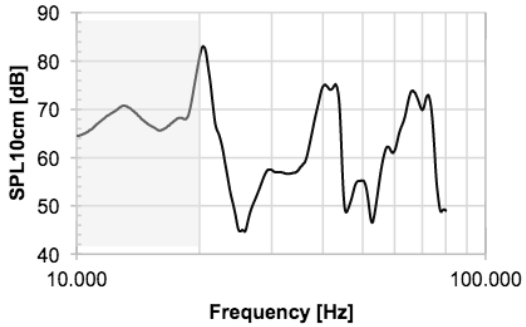


Acoustic parameters IEC 60268-5 baffle

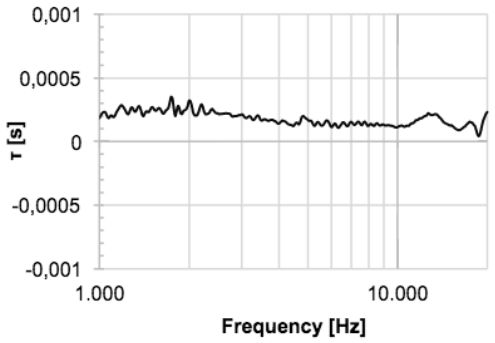
SPL (@15Vp drive)
Audio Range (1kHz-20kHz)



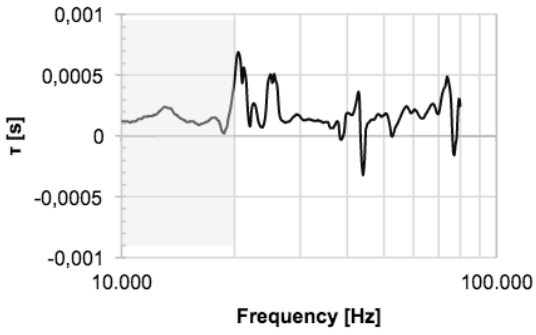
SPL (@5Vp drive)
Ultrasound Range (20kHz-80kHz)



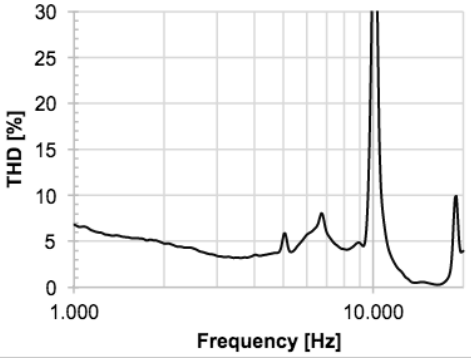
Group Delay
Audio Range (1kHz-20kHz)



Group Delay
Ultrasound Range (20kHz-80kHz)



THD (60dB SPL @4kHz)
Audio Range (1kHz-20kHz)



Mechanical Dimensions