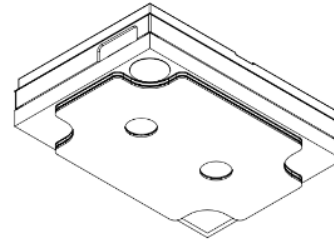
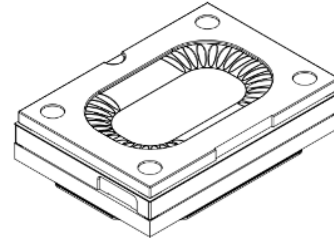


MEMS-based micro-speaker for headphones, wearables and array applications



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 | 1.4cm ³ |
| 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} | 15V _p |
| Voltage levels (Ultrasound) | |
| V _{dc} | 15V |
| V _{ac} | 5V _p |

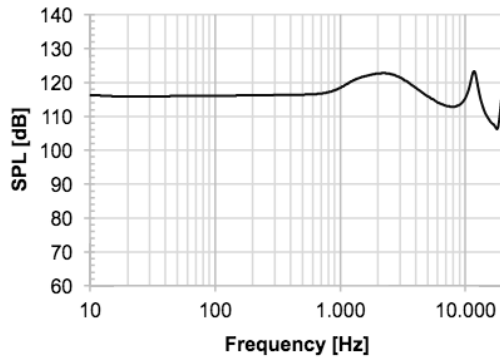
| Measured with IEC 60268-5 baffle | |
|---|-------------|
| Baffle type | IEC 60268-5 |
| Mic distance | 3cm |
| Reference distance | 10cm |

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

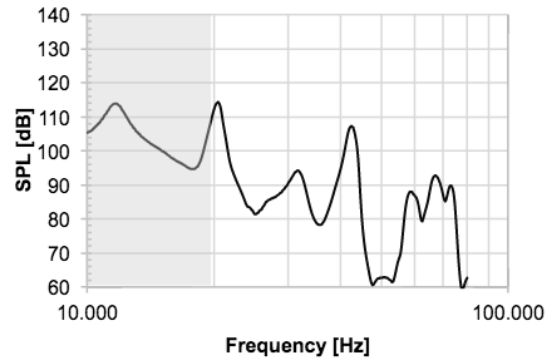
| Measurement Signal | Exp. Sweep |
|------------------------------|------------------|
| Frequency Range (Audio) | 1kHz - 20kHz |
| Frequency Range (Ultrasound) | 20kHz - 80kHz |
| Voltage levels (Audio) | |
| V _{dc} | 15V |
| V _{ac} | 15V _p |
| Voltage levels (Ultrasound) | |
| V _{dc} | 15V |
|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

Acoustic parameters IEC 60318-4 coupler

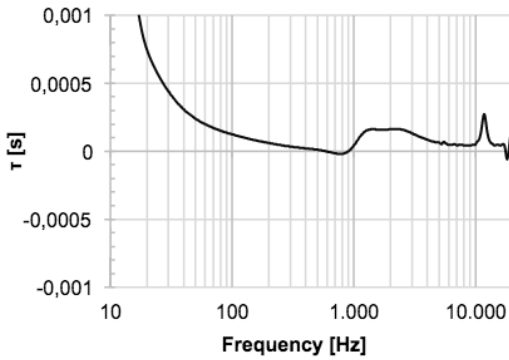
SPL (@15Vp drive)
Audio Range (10Hz-20kHz)



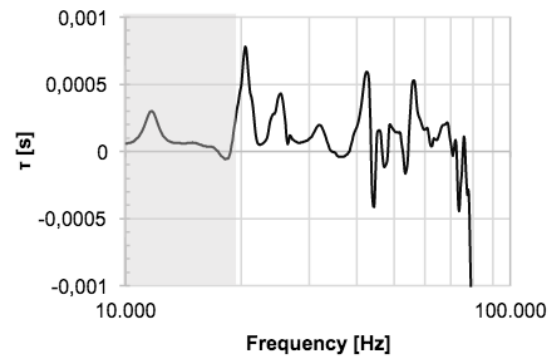
SPL (@5Vp drive)
Ultrasound Range (20kHz-80kHz)



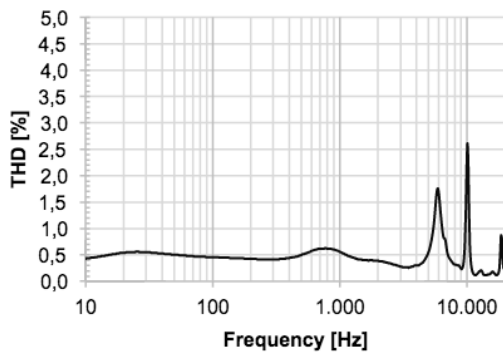
Group Delay
Audio Range (10Hz-20kHz)



Group Delay
Ultrasound Range (20kHz-80kHz)



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

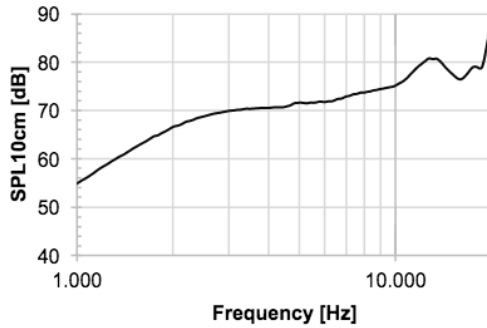




Acoustic parameters IEC 60268-5 baffle

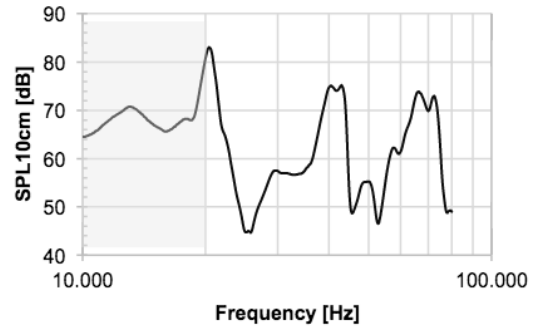
SPL (@15Vp drive)

Audio Range (1kHz-20kHz)



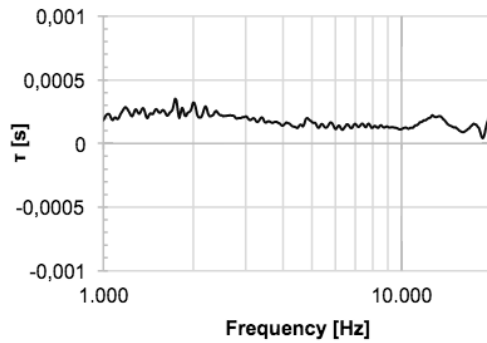
SPL (@5Vp drive)

Ultrasound Range (20kHz-80kHz)



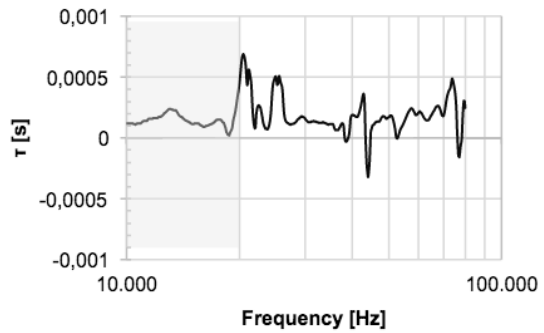
Group Delay

Audio Range (1kHz-20kHz)



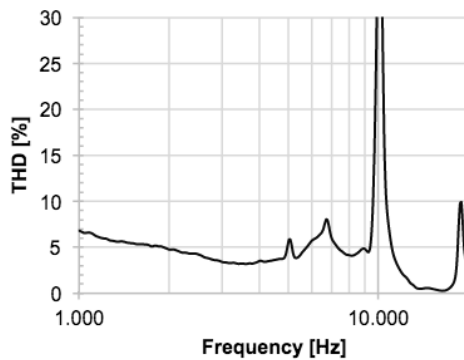
Group Delay

Ultrasound Range (20kHz-80kHz)

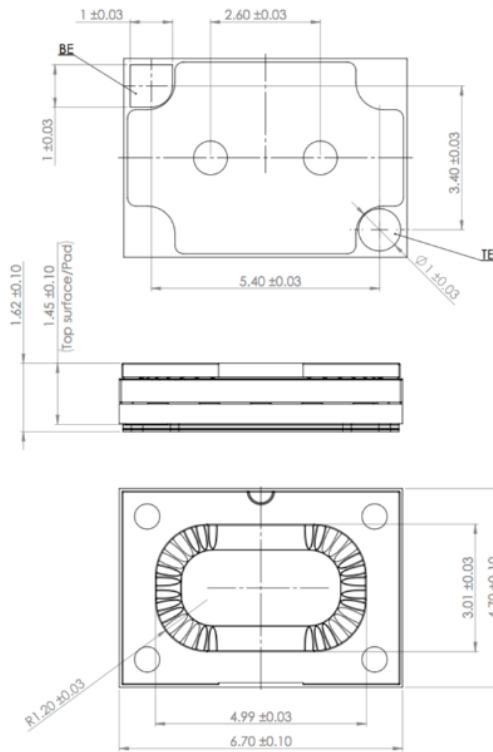


THD (60dB SPL @4kHz)

Audio Range (1kHz-20kHz)



Mechanical Dimensions



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