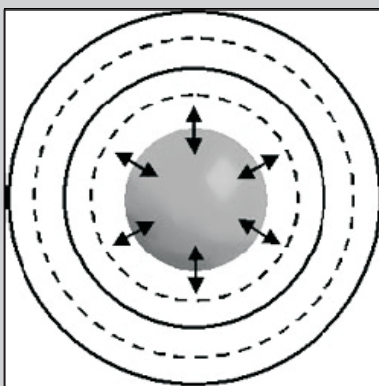


## Low Frequency Monopole

The low frequency monopole of Microflown Technologies is an omnidirectional volume velocity sound source. The sound source has a particle velocity reference sensor to measure accurately the output of the source. The frequency range covered by this source is from 30Hz up to 300Hz. The upper frequency is limited by the source diameter. If higher frequencies are required, a mid-high frequency monopole is also developed covering a bandwidth of 100Hz up to 7kHz. The sound power output of a monopole source is proportional with the frequency squared. The sound pressure at one meter is therefore low at lower frequencies. To be able to reach relative high sound pressure levels at low frequencies with an acceptable source velocity level one needs to increase the source diameter. For an omnidirectional behavior however, the diameter should be small compared to the wavelength. The low frequency monopole has a source diameter of 160mm.



*A pulsating sphere can be regarded as a monopole if the radius of the sphere is small compared to the wavelength*



### Typical applications

- ✓ Reciprocity measurements for panel noise contribution analysis
- ✓ For structure borne and airborne panel noise contribution analysis
- ✓ In situ transmission loss measurements

## Specifications - Low Frequency Monopole

### Sound source configuration

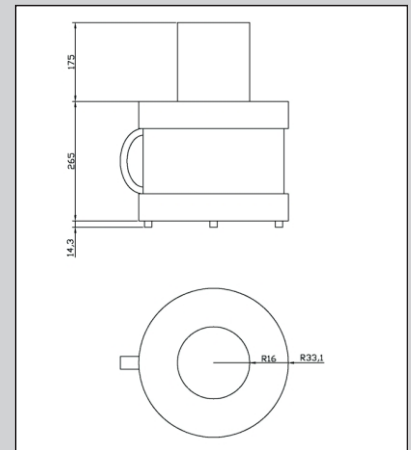
- 1\* Loudspeaker driver
- 1\* output nozzle with reference Microflown

### Physical characteristics

- Tube inner diameter: 160mm
- weight: 5kg

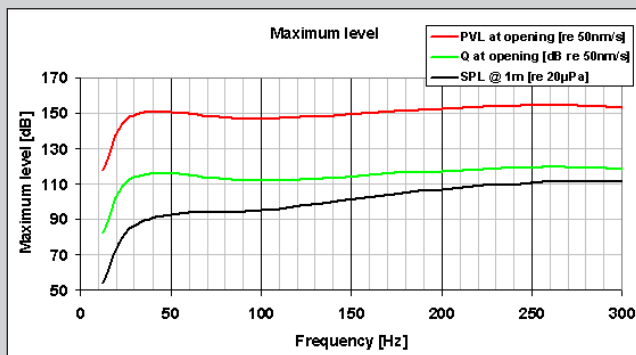
### Driver properties

- Power RMS: 250W
- Impedance:  $8\Omega$
- Frequency response: 30Hz - 300Hz

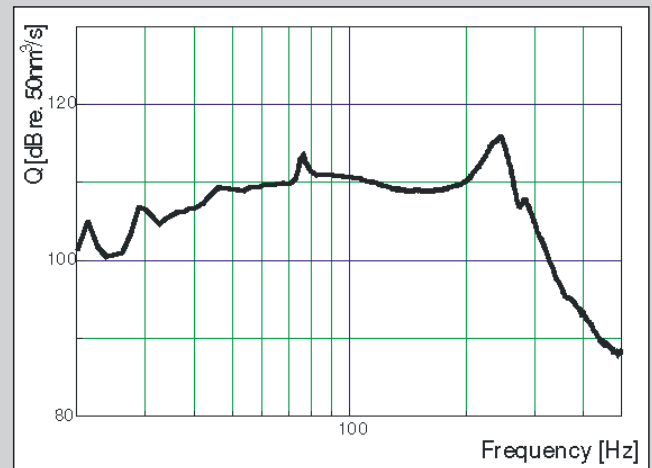


### High dB reference Microflown

- Maximum PVL: 170dB
- Frequency range: 0,1Hz- 20kHz



Red line: PVL at opening ( re 50nm/s )  
Green line: Q at opening ( dB re 50nm/s )  
Black line: SPL @ 1 meter ( re 20 $\mu$ Pa )



Frequency response curve of the monopole.  
Volume velocity level (Q) in dB (re. 50nm<sup>3</sup>/s)

## The Monopole comes with

- ✓ signal conditioner
- ✓ high dB particle velocity sensor
- ✓ powering and cabling
- ✓ amplifier
- ✓ option for 12V powering
- ✓ tube for calibrating reference sensor



Monopole  
signal conditioner