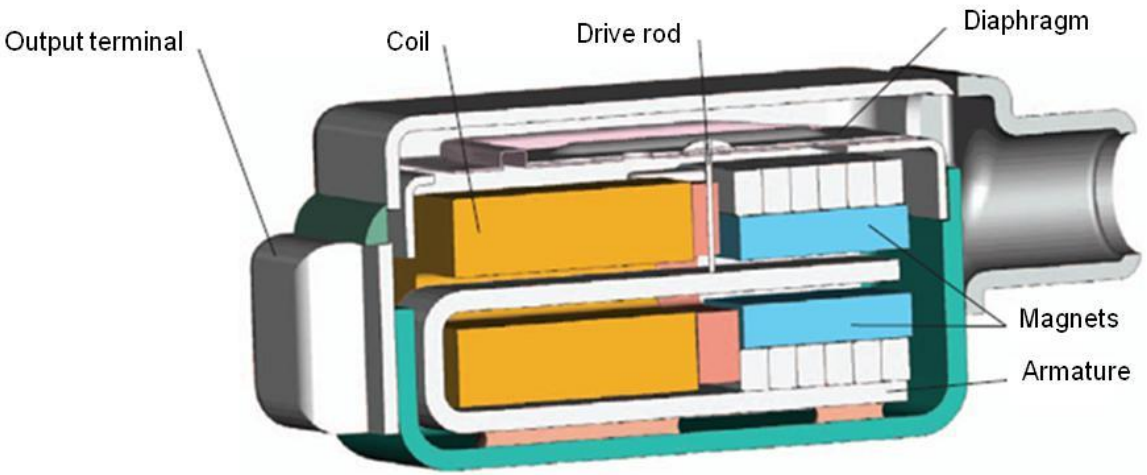
Boom Performance Comparison

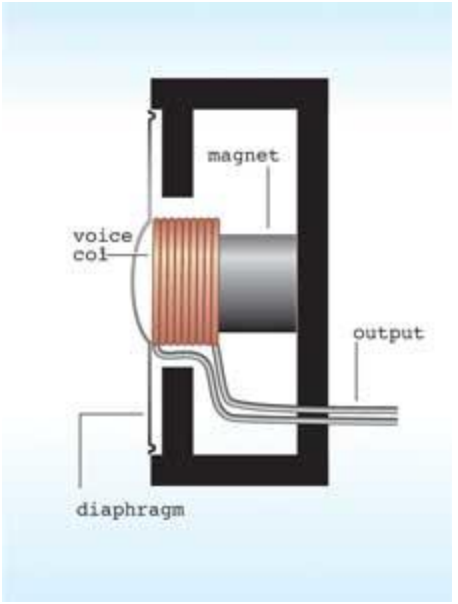
KA Balanced Armature versus Dynamic

Balanced Armature Technology

Introduction

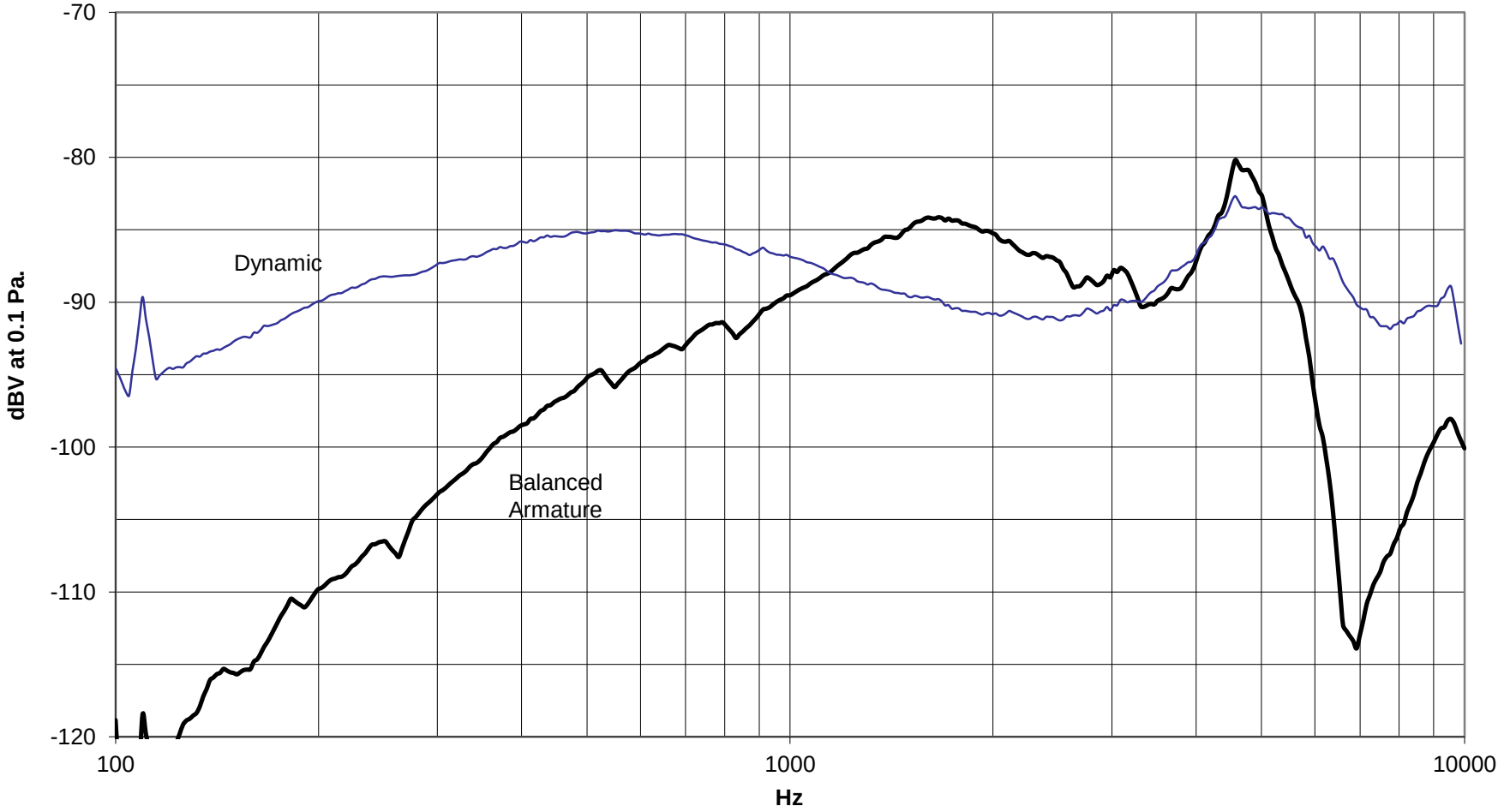
In a balanced armature microphone, air moves the diaphragm paddle. The paddle is connected by a stiff wire to an armature. The armature moves within a fixed coil and magnets. The motion generates a signal in coil, which connects to solder terminals. In a dynamic microphone, the coil moves relative to a fixed magnet.





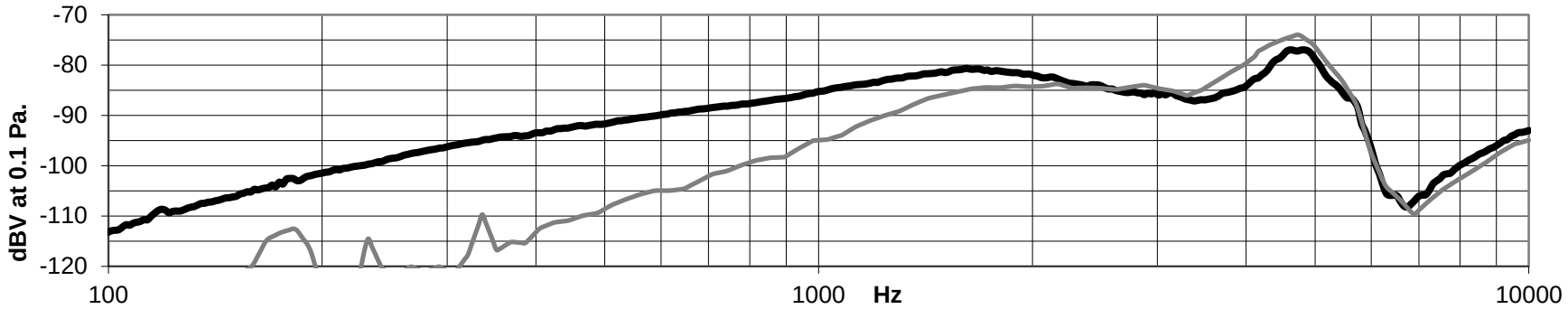
Typical Frequency Response with 300 ohm load

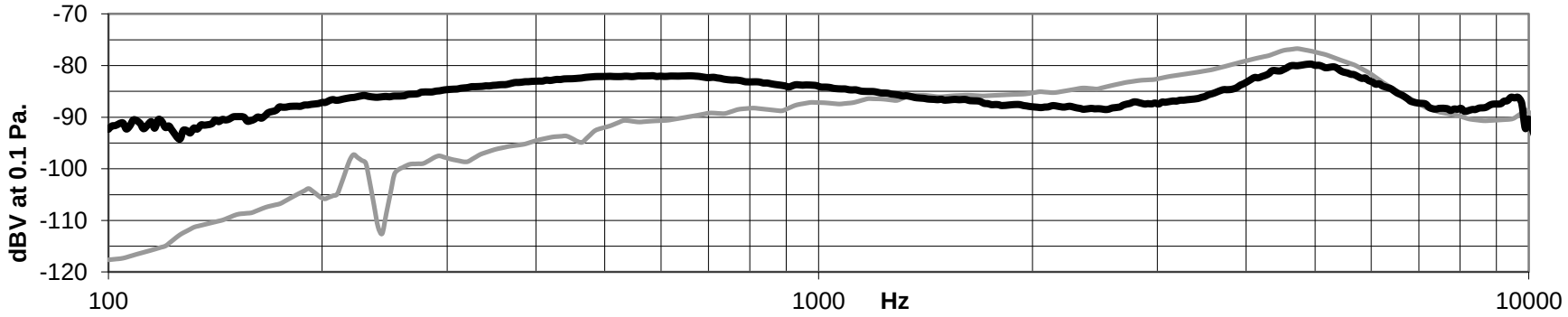
Note: Balanced Armature response is superior for voice articulation. Low and high frequency noise is filtered acoustically.



Noise cancellation: Proximity Effect

Note: Balanced armature typical crossover frequency is 2.5kHz, superior to 1.3kHz for dynamic boom.





Impedance Explained

The impedance of a dynamic microphone is mostly resistive, and therefore constant. The impedance of a balanced armature microphone is mostly reactive – it varies with frequency. A dynamic microphone is less efficient compared to a balanced armature microphone. More of the sound energy is dissipated as heat, rather than converted to signal.