

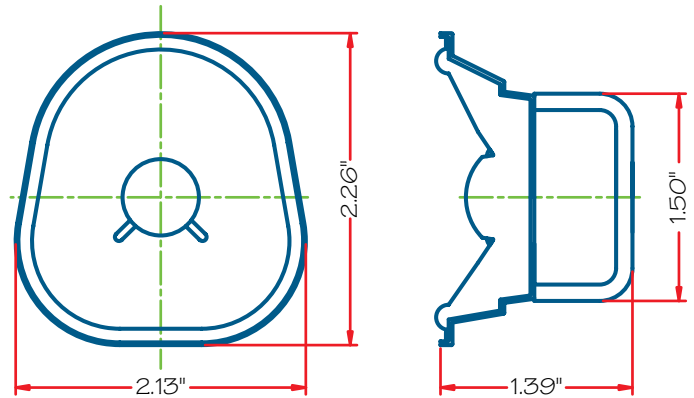
KOI HQ Driver

With cone area less than 4 square inches, the KOI HQ driver is the **world's smallest** transducer capable of **full-range** (wideband) performance.

Technical Highlights

Computer-generated non-resonant cone geometry: The unique shape of the KOI HQ driver cone was developed with the aid of sophisticated computer algorithms. The geometry minimizes resonance modes, which contribute greatly to non-linear behavior in conventional circular cones. The result is smoother amplitude response over a wider range of frequencies.

Patented heat transfer system: Drivers are ultimately limited in acoustic output by their power handling capability, and the problem is magnified in smaller drivers designed for wideband response. KOI's patented heat transfer design employs advanced materials and an innovative physical configuration that reduce voice coil operating temperature, thereby significantly increasing power handling capacity.



Mica surface application technology: The HQ driver cone features a surface application of mica. The unique properties of mica result in a cone structure with ideal sound propagation characteristics and ideal mass-to-stiffness ratio.*

A **special x-ray technique** was developed to improve the accuracy of the fabrication process. This brings the manufacturing tolerance limit to within 1 dB of reference—a level of precision unmatched in the industry. In the past, such matching could only be achieved at the expense of a high rejection rate.

State-of-the-art **listening analysis projects** played a crucial role in the development of the KOI HQ driver as well as KOI's patented **Human PsychoAcoustic[®]** technology.

Product Benefits

The performance of the KOI HQ driver is unprecedented. Never before has a transducer of such **small size** been capable of such **full-range response** at such **high sound pressure levels**. The driver's compact dimensions not only makes possible unusual product designs and applications; **sound imaging** is significantly enhanced because of the **near-point-source** geometry.

The HQ driver is also characterized by **exceptionally smooth amplitude response** over a wide range of the audio spectrum. Moreover, it exhibits **excellent dynamic linearity** and, hence, **very low distortion**. These characteristics result in not only **superb musical accuracy** but also **outstanding speech intelligibility**—an important factor in home theater and public address applications.



Applications

The diminutive size of the KOI HQ driver coupled with its extraordinary wideband performance make it ideal for a wide range of applications. These include...

- **Home theater systems**, where multichannel reproduction and the attendant need for multiple speakers are often at odds with room décor. Satellite speakers based on the KOI HQ driver can be almost invisible while delivering (in conjunction with a subwoofer) the requisite bandwidth and sound pressure levels for dynamic surround sound reproduction. Center-channel speakers based on KOI HQ driver technology deliver excellent speech intelligibility, making it unnecessary to use unnaturally high volume levels to comprehend dialogue.
- **High-performance car audio** applications, where the HQ driver's small size facilitates adaptation within the confined automobile interior space.
- **Portable sound systems**, such as business presentation public address systems, where primary speakers based on KOI HQ driver technology can deliver superior speech intelligibility with vastly reduced size, weight, and complexity.
- **Multimedia playback systems**, where high-quality, full-range reproduction is required for demanding A/V entertainment, music composition, and gaming applications. Systems based on the KOI HQ driver deliver impressive sonic performance in compact designs, making them demonstrably superior to today's typical multimedia speaker systems.



Market Impact

The KOI HQ driver will facilitate and accelerate the application of KOI's patented technologies to the car audio, home audio, home theater, business, and multimedia markets. The HQ driver comprises innovations in manufacturing technologies that have elevated quality standards far above current tolerance limits. These technologies will enable KOI to create products that will define and meet market needs for the next generation of audio.

*Some versions of the HQ driver do not employ mica surface application technology.

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