



LOUDSPEAKER TECHNOLOGY OF THE YEAR

Kharma "Omega-C" Drivers

THE DUTCH LOUDSPEAKER manufacturer Kharma has a long history of technical innovation in all parts of speaker design, particularly in drivers. But the company's new "Omega-C" drivers in the Enigma line have elevated the speakers' performance to an entirely new level of musical realism.

Kharma's in-house developed technology begins with virtually eliminating all the iron in the motor, replacing it with pre-magnetized ultra-high flux neodymium. This cluster array focuses the magnetic field without the need for iron. Removing the iron from a driver motor is a breakthrough because iron creates eddy currents in the voice coil, currents that oppose voice-coil motion. Consequently, the iron-less Omega-C driver can move more quickly with greater resolution, unimpeded by eddy currents.

I was once given a graphic demonstration of the effect of eddy currents; a 1" steel ball was dropped through a 24"-long steel tube just big enough to hold the ball. As expected, the ball dropped through the tube nearly instantaneously.

Then a magnetized steel ball of the same size and weight was dropped into the tube, but this time it took many seconds for the ball to emerge as it slowly floated down the tube. The magnetic eddy currents created by the magnetized ball impeded

the ball's motion through the tube.

This is the phenomenon in loudspeaker motors that Kharma has eliminated in the Omega-C drivers.

This advanced motor technology is used in Kharma's woofer and midrange drivers. The iron-less motors are mated to cones made from ultra-high-modulus carbon fiber, the state of the art in carbon today. The cone shape is optimized with finite element analysis to push the first break-up frequency far beyond the range over which it is operated. Even the voice-coil former is made from carbon fiber.

The result of this highly advanced engineering is a loudspeaker—the Enigma Veyron 2D now under review in my listening room—that is spectacularly fast, dynamic, uncolored, and massively resolving. The Enigma Veyron 2D also disappears as a sound source like no other dynamic speaker I've heard, throwing a stunningly large and resolved soundstage. Not to give too much away before my upcoming review, but the Enigma Veyron 2D is in my view a leading candidate for the world's finest-sounding dynamic loudspeaker.

Kharma has taken a world-class speaker—the earlier generation Enigma Veyron—and turned it into a state-of-the-art reference-class speaker with its highly advanced driver technology. That achievement deserves recognition with *The Absolute Sound's* Loudspeaker Technology of the Year Award.

—Robert Harley