



## Kronos Quartet Finds the Perfect Microphones

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Although they are most popularly known for their interpretations of Jimi Hendrix, Kronos Quartet has continued to evolve over the years. Currently on a 25th anniversary tour with a program including very old music and other material styled in an old manner, Kronos defies categorization. The group is composed of members David Harrington and John Sherba - violins, Hank Dutt - viola, and Joan Jeanrenaud - cello.



The string quartet genre dates back to Haydn in the 18th Century, and Kronos pushes the idiom through ancient and contemporary tradition to create new concepts in music and music theater. In point, they are amplified during performance, and many of the works they perform entail electronic effects and accompaniment by pre-recorded tape. Thus they have come to rely on electronic equipment to enhance the acoustic output of their instruments, and have done so for many years. Since the first link in the chain in converting acoustic sounds to electronic form is the microphone, Kronos Quartet has experience in looking for the right mics.

This quest for the ultimate microphones took the Quartet through a myriad of choices over a very long period of time. Sound engineer Mark Grey says, "The best microphones were selected, implemented, and then discarded. Kronos was looking for the most realistic string quartet sound. It turns out each different make and model had a character all their own." After many trials by long-time Kronos sound engineers Jay Cloidt and Scott Fraser, Kronos had selected a winner: the Neumann KM 150, four of them to be exact. According to Grey, "this mic definitely sounded the most natural to everyone in the group."

Also, Kronos relies on omni lavalier mics in addition to the Neumanns. "We use lavalier mics right on the instruments. For myself, they mainly provide input to the effects devices as well as a slight return feed for two on-stage wedge monitors" says Grey. "The Neumanns are used to pick up the warmth of the group as a whole and then blended with the various effect returns at FOH. The result is an amazingly sweet house sound." The Quartet tours with three different alternating engineers Cloidt, Fraser and Grey - each of whom mixes the sound unique to their own tastes. But the main sound for reinforcement is from the KM 150s. This is also true for any live recordings or broadcasts. According to Grey, "whenever a truck wants a feed, we split the stagebox and strongly recommend using the Neumanns only. The broadcasting engineers quickly find out why the Neumanns are ideal."

In order to provide amplification of the Quartet without it sounding like they are coming through a P.A., a number of techniques are employed. First, according to Grey "we position the mics in the right spot for each instrument." The KM 150s are each placed on very short stands, less than a foot from the floor. Each mic is under the instrument and in the "sweet spot." This also helps to make them very unobtrusive. "Since these mics are black and quite small, they are nearly invisible to the audience" says Grey. Additionally, the P.A. is delayed slightly so that the acoustic wavefront from the Quartet arrives just before that of the amplified signal. Grey says "I usually have the P.A. front-fills set to about 5ms and the main stacks set to about 15ms behind the group. It just makes the sound wrap around the audience with full ensemble clarity and warmth. Most people don't even realize they're amplified."

Kronos Quartet tours quite extensively all over the world. For more information or for tour schedules, please contact them by e-mail at ▶ [kronos@kronos.xo.com](mailto:kronos@kronos.xo.com).