

**Whether you are using a quadrupole as a mass spectrometer analyzer, or to size select ions for your experiment, it is important to use the quadrupole that will give you the best results.**

With the proliferation of quadrupole technology over the last 60 years, the 6 mm quadrupole has become the most common size. This is due largely to the relatively low cost of producing the RF supplies that drive them. You will find 6 mm quadrupoles used in analytical laboratory systems like GC/MS, process analyzers and Residual Gas Analysis (RGA). However, in a high performance research analyzer, the size of the quadrupole will determine the quality of your data.

The key performance attributes for quadrupoles include mass range, resolution and transmission. Better transmission means you get more signal for analysis and lower detection limits. In an ion selection application, higher transmission means less time collecting the ions you need. Resolution gives you the ability to see distinct, individual peaks for ions of similar mass, in some cases, down to less than 0.05 Daltons apart. For a given RF power supply, as the quadrupole gets large, the transmission and resolution improve, while the mass range is reduced.

So how does mass range fit in? This depends completely on your requirements. Once you decide on the mass range that you need, you will always want to maximize your quadrupole size to get the best mass separation and the highest ion throughput possible.

Once a scientist decides to look beyond the 6 mm quadrupole mass spectrometer system (QMS) they may find navigating the options for selecting the right system a challenge. Extrel offers quadrupoles in three different sizes, 6 mm, 9.5 mm and 19 mm. Extrel is known for the stability and reliability of its RF power supply products which, when coupled with the appropriate quadrupole, gives you an analyzer optimized to your experiment.

Extrel has over 50 years' experience in supplying quadrupole systems for advanced research, with an excellent reputation for performance and quality. Our application experts are available to help you choose the right system for your needs.

*Discover the Advantage of Extrel.*



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