



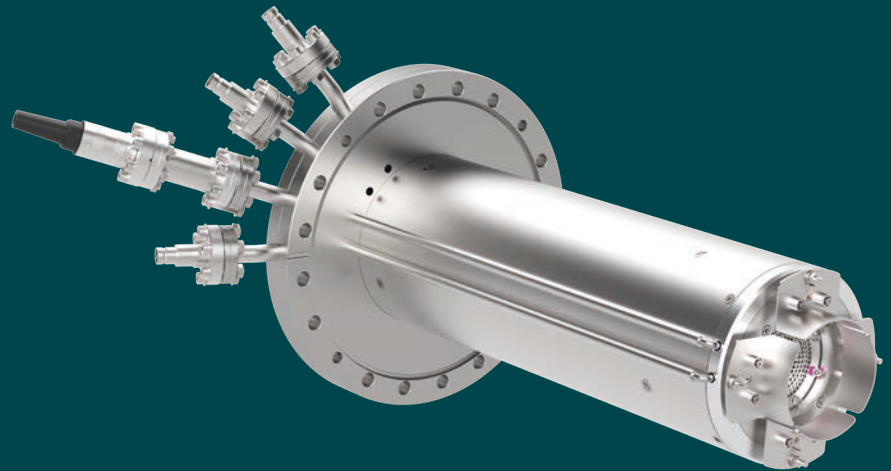
NL-QMS Quadrupole Mass Spectrometer

Deposit size
selected nanoparticles
onto your substrate

Deflection plates
for beam steering

+/- 2% ultimate
particle size resolution

100-10⁶ amu
mass range



Measure or filter
nanoparticle size

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Quadrupole Mass Spectrometer (NL-QMS)

The Nikalyte NL-QMS allows the user to measure or filter the mass spectrum of nanoparticles in-flight when placed in line with the NL-UHV nanoparticle source and hence deposit nano coatings with the desired nanoparticle size. The NL-QMS reduces the size distribution of nanoparticles generated in the NL-UHV from $\pm 20\%$ to $\pm 2\%$. Nanoparticles as small as a few atoms can be filtered.

The NL-QMS can be supplied with optional biased deflection plates, to enable the filtered nanoparticle beam to be steered off axis onto your sample.

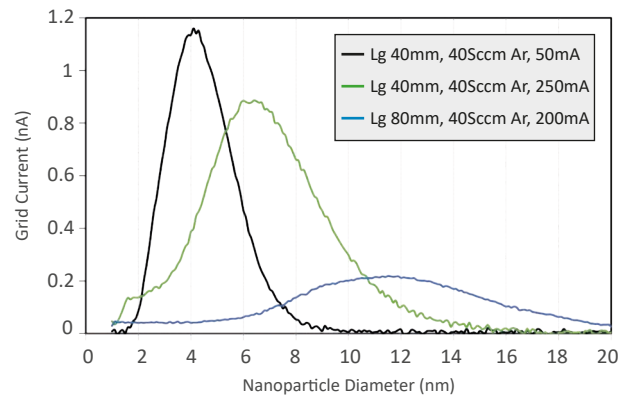
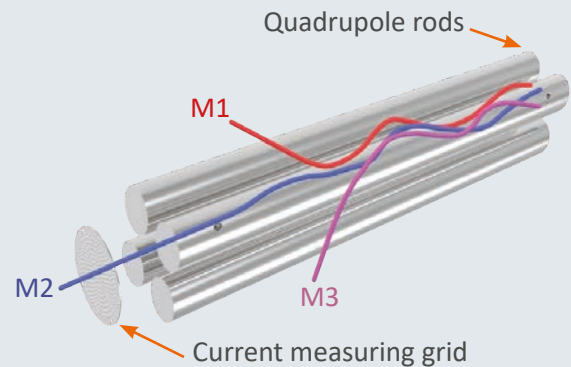


Fig. 1. Cu nanoparticle size distribution measured with the NL-QMS for different NL-UHV process conditions.

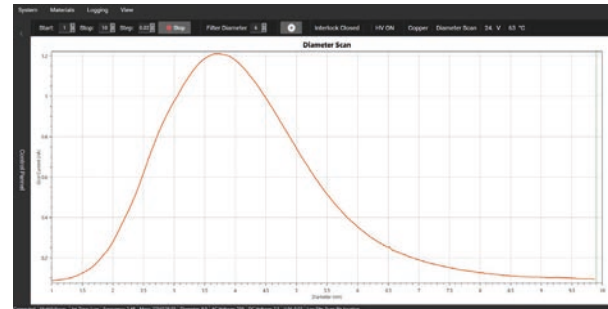
Principle of Operation

The operation of the NL-QMS is based on the application of AC and DC voltages to 4 rods such that nanoparticles passing through the rods are forced into an oscillatory path. For a given AC frequency and amplitude only one mass (within the resolution of the instrument) will continue on a stable path, particles with masses outside this range will be rejected. The ion flux of particles that successfully pass through the QMS is measured by the grid at the exit. The grid current is a measure of the number of nanoparticles with the selected size being produced by the NL-UHV.

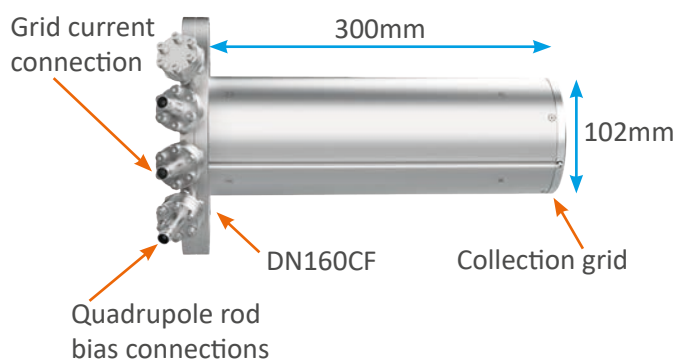


Windows™ Software Control

- Scan mode - measure full size distribution.
- Filter mode - select size to deposit.
- Real time graphical display.
- Scan logging and CSV file export.



Specifications



Mounting flange	DN160CF
In-vacuum length	300mm
In-vacuum diameter	102mm (without deflection plates)
Software control	Yes
Bakeable	Yes
Size resolution	$\pm 2\%$
Filtering by mass	Yes
Filtering by size	Yes
Power supply	Single phase, 100-240V 50/60Hz

For further information please contact: sales@nikalyte.com

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