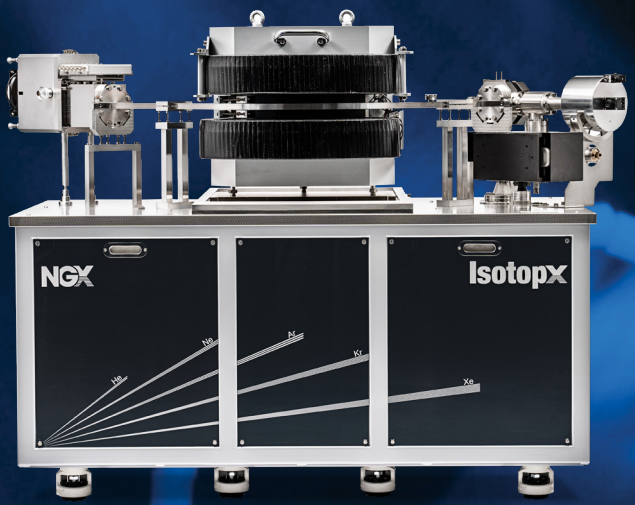
Isotopx



NGX

Helium Plus

The New Standard in High Precision
Helium Isotope Analysis

Excellence in Mass Spectrometry

isotopx.com

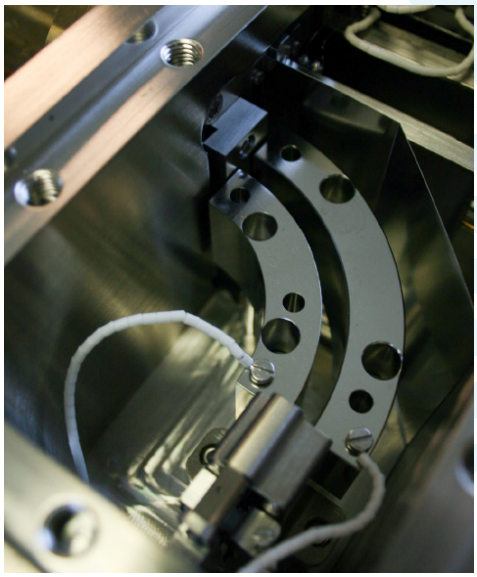
NGX Helium Plus

The new standard in high precision helium isotope analysis

The analysis of helium isotopes can be challenging. Your instrument needs the resolution, the sensitivity, and the abundance sensitivity to allow you to have confidence in your measurement. You need the same result, day after day. And what if you want to analyse other noble gases too? Until now the solutions have all been compromised.

But now there is a solution without compromise. NGX Helium Plus was designed specifically for the measurement of helium isotopes. It has the required abundance sensitivity, resolution and sensitivity to give you all of the confidence you need for your helium measurements.

And best of all, NGX Helium Plus can be configured with additional detectors to allow the static multicollection of the other noble gas isotope systems such as neon as well. So whichever way you look at it, there is no compromise.



Electrostatic Filter (ESF)

NGX Helium Plus

The new standard in high precision helium isotope analysis

The NGX noble gas mass spectrometer has been a leader in its field for many years. One strength has been its flexibility and configurability. NGX Helium Plus takes this one step further. It's specifically tailored for high precision He analysis, and is fitted with one Faraday cup and one ion counting multiplier.

The ion counting multiplier is mounted behind a 5cm radius ElectroStatic Filter (ESF) to minimise the contribution of the ^{4}He tail when measuring low abundance ^{3}He. We specify less than 1ppb contribution from ^{4}He at the ^{3}He peak, which matches or betters all other commercially-available noble gas mass spectrometers. So there is no need to worry about ^{4}He peak tailing.

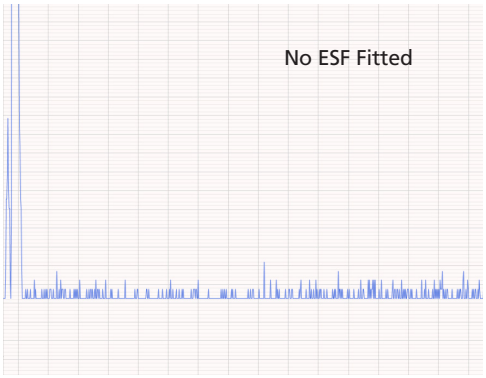
The mass resolving power of the detectors is in excess of 2,500, and the resolution greater than 600. So in practice, you can comfortably resolve ^{3}He from the interfering species of HD and H_3.

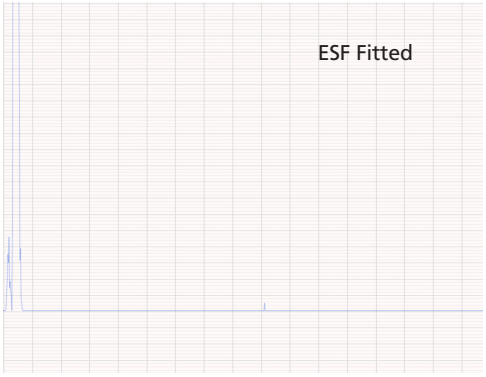
The Faraday detector uses ATONA® amplifier technology developed at Isotopx. This amplifier does not use traditional resistor technology but has a huge dynamic range, the equivalent headroom of 100V measured on a $10^{11}\Omega$ resistor with the equivalent noise characteristic of a $10^{14}\Omega$ amplifier at 20 secs integration, corresponding to a measurable ion beam in the range of 1nA to 1aA.

Sensitivity may be a concern for your He measurements, but there's no need to worry here. NGX Helium Plus is highly sensitive with a volume of just 1.4 litres. Even better, it's fitted with a unique, patented cathode source that typically improves sensitivity by a factor of three. And because of the unique design, the filament can be used at higher trap currents without reducing filament lifetime.

In addition to He analysis, either detector may also be used to collect all noble gas isotopes of interest by employing a 'peak jumping' method without altering the accelerating voltage. Additional Faraday and/or ion counting detectors can also be configured, so there is no compromise in flexibility with NGX Helium Plus.

The resolution of the NGX Helium Plus allows comfortable separation of the $^{3}He^{+}$ from the HD^{+}/H_3^{+} interferences





The scans above show the differences in the baselines over the mass range 3amu to 3.5amu, without and then with an ESF. The peaks on the far left are $^{3}He^{+}$ and HD^{+}/H_3^{+}

Isotopx

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