



Thermo Scientific iCAP 7000 Plus Series ICP-OES

Purged optical path plasma interfaces for improved sensitivity and stability



The dual view purged optical path plasma interfaces of the Thermo Scientific™ iCAP™ 7000 Plus Series ICP-OES enhance long term stability and improve detection limits in the wavelength region below 180 nm for both axial and radial measurements.

The dual view iCAP 7000 Plus Series ICP-OES can measure light emitted from the sample both axially and radially. The interface between the polychromator and the plasma is critical to ensure excellent performance in terms of sensitivity and stability. The iCAP 7000 Plus Series ICP-OES employs the use of purged optical pathways (POP) as interfaces between the plasma and the fore optics of the polychromator to ensure that any absorption of ultraviolet light by air is minimized (Figure 1).

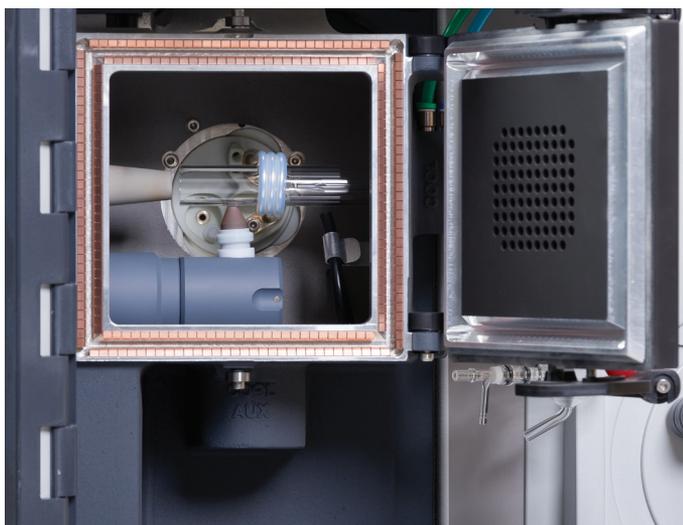


Figure 1. The torch box of a dual view iCAP 7000 Plus Series ICP-OES, showing the two POP plasma interfaces.

The purge gas exits the optical system both through the axial and radial POP interface, and in doing so removes constituents in the plasma interface that may otherwise absorb the UV light. Additionally, the POP interface purge gas flows provide a counter flow of argon to remove environmental factors, such as dust and soot, removing the interferences they cause. Some other ICP-OES designs are required to use additional gas flows such as a shear gas, to optimize their plasma interface. This can increase instrument running costs, interfere with light transmission or require expensive accessories such as air compressors to be purchased with the instrument.

The new radial POP interface for the dual view iCAP 7000 Plus Series ICP-OES replaces a simple quartz window. The radial POP interface has a light channel which only allows direct light from the plasma to pass through to the polychromator. This improves long term stability of the analysis. Due to the purge gas directed through the POP interface UV light transmission is improved (Figure 2).

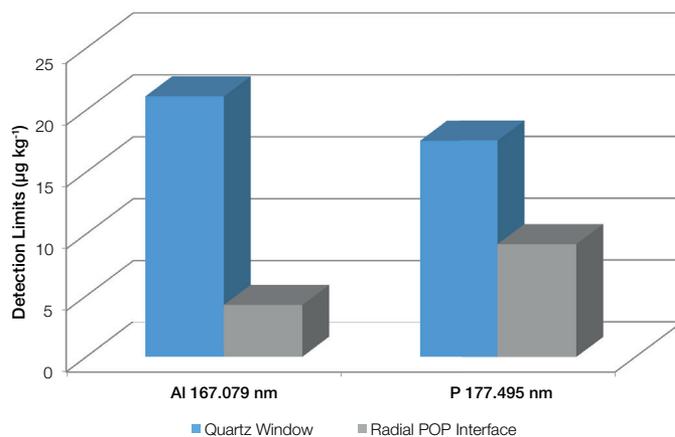


Figure 2. Improved detection limits of Al 167.079 nm and P 177.495 nm in the radial view of a dual view iCAP 7000 Plus Series ICP-OES.

- Reduced need for user maintenance
- Improved UV detection limits through purged light path
- Long term stability of high matrix analysis

Find out more at thermofisher.com/ICP-OES