

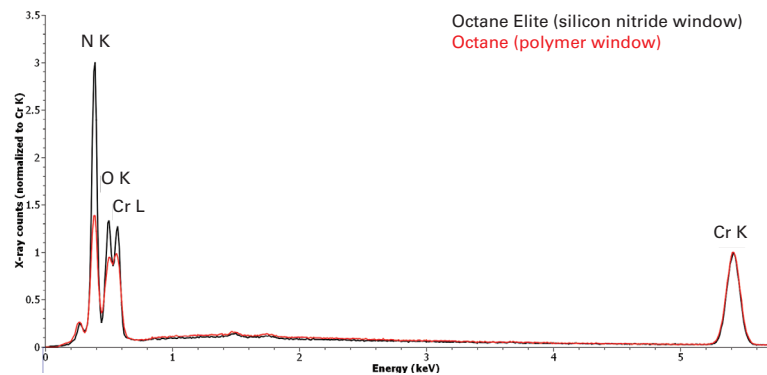
# EDAX Octane Elite EDS System

## Product Bulletin – EDS



The game-changing advancements in the EDAX Octane Elite EDS system with proprietary silicon drift detectors (SDDs) take energy dispersive spectroscopy (EDS) analysis to the next level. This system includes detectors with a silicon nitride ( $\text{Si}_3\text{N}_4$ ) window, offering remarkable improvements in low energy sensitivity for light element detection and low kV microanalysis. The Octane Elite detectors also use high-speed x-ray data processing technology within a smaller and fully vacuum-encapsulated detector device.

- Octane Elite EDS system with motorized slide
- Highest resolution with premium resolution option
- Increased light element sensitivity
- Outstanding low-energy performance
- Silicon nitride window
- Market-leading throughput count rate
- Integrated EDS-EBSD-WDS option with the Trident system



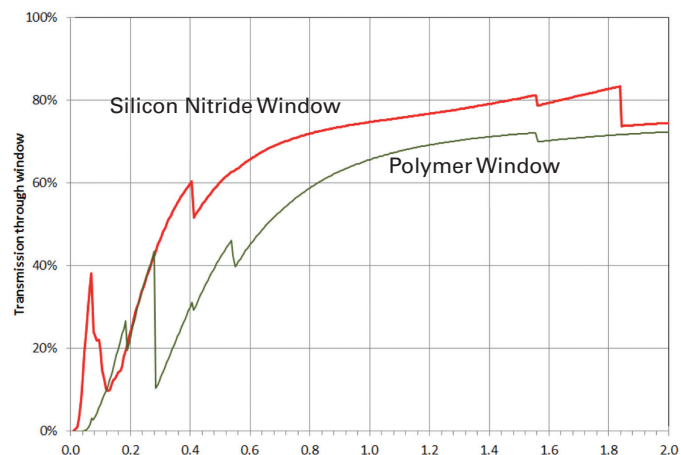
**Figure 1.** Spectra were acquired from a chromium nitride sample at 10 kV. Comparing the scaled spectra to the Cr K peak shows the increased nitrogen and oxygen peak intensities achieved with a  $\text{Si}_3\text{N}_4$  window.

### Best light element performance

The silicon nitride window offers significant improvements compared to a polymer window, improving light element performance and significantly more critical data for the analyst.

### $\text{Si}_3\text{N}_4$ window

The silicon nitride window offers superior low-energy transmission compared to a polymer window.



**Figure 2.** The  $\text{Si}_3\text{N}_4$  window offers superior low-energy transmission compared to a polymer window.

## Specifications

- Octane Elite SDD options:
  - Plus (30 mm<sup>2</sup>)
  - Super (70 mm<sup>2</sup>)
- 125 eV resolution at Mn K $\alpha$  at 10k cps
  - 123 eV premium option
- Carbon detection above 750k input cps for ultra-fast mapping and particle acquisition
- Detection range: Al L (73 eV) to Am
- Throughput: 850k ocps at 2.0m icps
- Al L to Al K peak height ratio of 1:1 at 2.5 kV
- Cooling: Peltier
- Supplied with APEX Advanced software for EDS

## Features and benefits

### Low kV performance

The mechanical properties of Si<sub>3</sub>N<sub>4</sub> allow the use of thinly fabricated windows, offering a great benefit in terms of sensitivity and optimal low-voltage analysis.

### Optimized SDD electronics

- Fast pulse processing for mapping and quantification
- Optimized data quality at all count rates
- High-resolution quantitative analysis at mapping speeds greater than 400,000 output cps

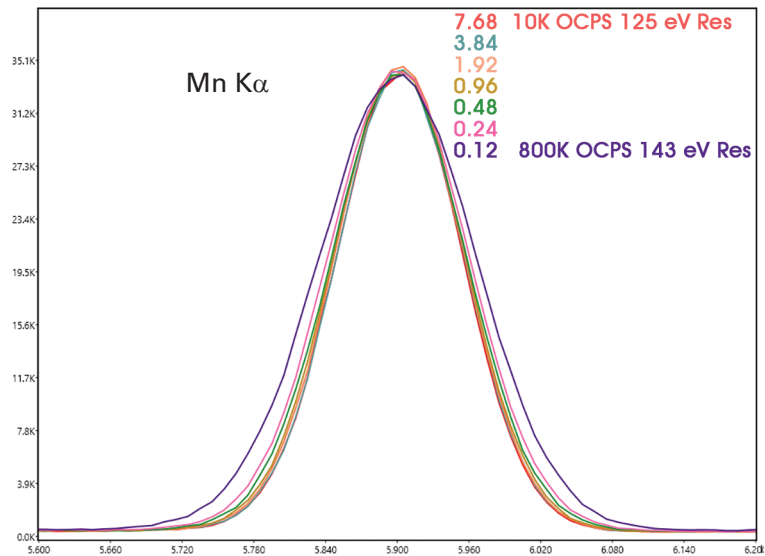


Figure 3. 125 eV resolution at Mn K $\alpha$  at 10k cps.

### Throughput

EDAX EDS systems with advanced detection electronics offer the highest throughput count rates for the best possible analysis and increased productivity.

### Reliability

The material properties and durability of Si<sub>3</sub>N<sub>4</sub> ensure the most robust and reliable detectors available for all EDS applications.

### Motorized slide

The motorized slide offers complete control of the detector via the software and is optimal for analytical flexibility. It is ideal for all FIB systems.

**APEX software for EDS allows users to optimize their analysis time and get the best possible data from their sample**

APEX™ ensures high-quality, accurate results and increased productivity with its easy-to-use interface, live-time graphical display, and simultaneous review mode.

## Conclusion

The design enhancements and analytical benefits of the Octane Elite EDS system ensure that it remains the platinum standard for analysts who face materials characterization challenges that demand the full range of analysis options.