



- Unique geometry inside the TEM column ensures optimal performance
- Market leading solid angles up to 1.1 steradian
- Windowless design maximizes effective solid angle
- Unique and innovative electronics built into the detectors delivers cleaner data for optimal results
- Motorized slide automatically retracts to protect detector against excessive backscatter electrons

edax.com

The Octane Silicon Drift Detector (SDD) Series for the transmission electron microscopy (TEM), based on the state-of-the-art design of the Octane SEM series, extends the Octane portfolio to provide optimized analysis solutions to meet the needs of all TEM applications.

**The Octane SDD Series for TEM includes three models**

- Octane T Plus** Entry level SDD with super ultra-thin window (SUTW) mountable on all TEMs
- Octane T Optima** Windowless design optimized for your TEM column with solid angles up to 0.5 steradian
- Octane T Ultra** Highest sensitivity SDD available, windowless, with ultimate solid angle up to 1.1 steradian for ultimate performance

**Increased Solid Angle for Optimal Results**

The design of the Octane SDD Series for TEM provides a higher solid angle up to 1.1 steradian, which increases count rates and ensures faster data collection on sensitive samples. The results in Figure 1 show the improvement in results obtained by an optimized 30 mm<sup>2</sup> detector compared with those of a Si(Li) detector under identical operating conditions.

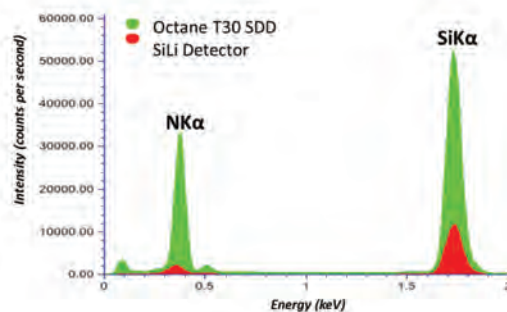


Figure 1: Si<sub>4</sub>N<sub>4</sub> collected with an Octane T Plus vs Si(Li) on the same column

**Windowless Design**

The Octane SDD Series for TEM detectors are designed specifically not to require the typical protective window in front of the module. This design:

- Improves the light element sensitivity of the detector by up to 500%
- Increases the count rate by up to 35% for heavy elements
- Enhances the mapping speed and light element detection in low concentrations

**TEAM™ EDS Analysis System Software**

The Octane SDD Series for TEM is paired with TEAM™ EDS software designed with TEM considerations in mind to enable users to optimize their analysis time and get the best data from their samples.

## Specifications

### Octane SDD Series for TEM

- Resolution of 129 eV or better, measured at MnK, according to ISO 15632:2012
- Peak stability of <1 eV up to 100 kcps
- Uniquely designed 30 mm<sup>2</sup>, 60 mm<sup>2</sup> and 100 mm<sup>2</sup> SDD chips optimized for solid angle
- Peak to background >9000:1
- Input count rates up to 3,000 kcps and throughput >950 kcps
- 5 eV/Ch and 10 eV/Ch for flexible acquisition
- Fully-featured TEAM™ EDS Software Suite for TEM applications
  - Spectrum Survey with EXpert ID
  - Smart Quant with EXpert ID
  - Multipoint Analysis
  - Linescan Acquisition
  - Smart Phase Mapping
  - Smart Data Management
  - EDS Quant Maps and Rebuild
  - Smart Drift Correction
  - Offline Software License

## Features and Benefits

### Data acquisition and signal processing electronics integrated on the detector

- Reduces noise for a better signal/noise ratio and improved detection limits
- Simplifies installation and eliminates the need for separate data acquisition enclosure
- Improves performance and offers easy remote access via Ethernet from any computer

### Intelligence built into detector

- Protects against hazardous system conditions
- Automatically retracts to safe position without user intervention when high energy electrons are detected

### Automated calibration algorithm

- Fast, repeatable, and accurate setup
- Calibration data resides in the detector eliminating the need to recalibrate when accessing remotely

### TEAM™ Software Suite allows users to optimize their analysis time and get the best possible data from their sample

- Smart Track - ensures optimal working conditions on setup
- EXpert ID - revolutionary one-step peak identification program
- Smart Phase Mapping - automatically determines best mapping resolution and collection time required, and identifies all the elements present
- Smart Drift - monitors and dynamically adjusts parameters to account for drift changes
- Smart Data Management - increases ease of use and provides simple file management

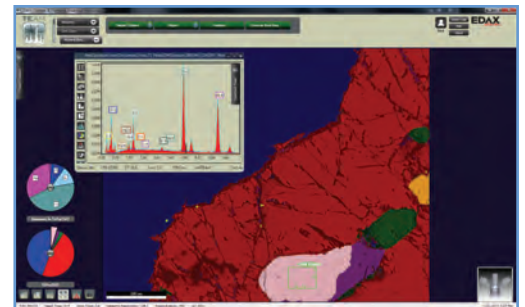


Figure 2: The TEAM™ EDS interface maximizes the display area and allows quick access to all features

## Conclusion

The Octane SDD Series for TEM with TEAM™ EDS software is the most intuitive and easy to use analytical tool for the TEM. It offers fully integrated data acquisition and signal processing electronics, coupled with Smart Features to guide set-up and analysis. With the addition of the windowless option, which maximizes collection efficiency and optimizes light element performance, users are certain of achieving the best possible results in challenging TEM conditions.