The Velocity™ EBSD Camera Series offers high-speed EBSD mapping with the best indexing performance on real-world materials. Powered by a CMOS sensor, the Velocity combines fast acquisition with high sensitivity and low noise performance for optimal collection and data quality.

The Velocity Camera Series is available in three different models:
- **Velocity Pro** – Up to 2,000 indexed points per second
- **Velocity Plus** – Up to 3,000 indexed points per second
- **Velocity Super** – Up to 4,500 indexed points per second

For all three models, these speeds can be achieved while providing indexing success rates up to 99% or better. At these speeds, the Velocity Cameras utilize 120 x 120 pixel images for improved band detection. This image resolution, combined with EDAX’s proven triplet indexing routine, provides orientation precision values of less than 0.1°, without needing any specialized processing routines for accurate characterization of deformed microstructures.

The performance of the Velocity camera extends to a wide range of materials, including lower symmetry, multi-phase and deformed structures. The Velocity Series enables efficient data collection on these real-world samples with the quality results needed for optimal materials analysis.

The Velocity EBSD Cameras can integrate with compatible EDAX EDS detectors for efficient simultaneous EDS-EBSD collection, even at the highest collection speeds. When combined with Chi-Scan™ analysis, this results in useful integrated data for accurate phase differentiation.

**Figure 1.** EBSD orientation map from Inconel 600 was collected at 3,000 indexed points per second at 11 nA beam current with >99% indexing success.

**Figure 2.** EBSD orientation map from additively manufactured Inconel 718 was collected at 4,500 indexed points per second at 25 nA beam current.
Specifications

- Data collection rates:
  - **Velocity Pro** up to 2,000 indexed points per second
  - **Velocity Plus** up to 3,000 indexed points per second
  - **Velocity Super** up to 4,500 indexed points per second
- Low noise CMOS sensor
- Orientation precision less than 0.1° without special correction routines
- 640 x 480 pixel image size (H x W)
- 120 x 120 image resolution at maximum indexing speeds
- 12-bit imaging
- Phosphor screen optimized for high speed/high sensitivity collection
- Custom lens for optimal performance
- Operation down to 5 kV acceleration voltage
- Compatible with NPAR and OIM Analysis™
- Compatible with HR-EBSD
- Motorized slide with metal bellows vacuum protection
- PRIAS™ and Forward Scatter Detector included

Features and Benefits

**Data collection rates up to 4,500 indexed points per second**

- Collect EBSD maps in minutes for efficient SEM use, *in-situ* experiments, and 3D EBSD applications

**High-speed, low-noise CMOS sensor**

- Provides high sensitivity, low noise, and 120 x 120 pixel images for EBSD indexing at the highest speeds

**Orientation precision of less than 0.1°**

- Clear characterization of deformed microstructures with standard indexing routines

**Highest indexing success rates**

- EDAX’s proven triplet indexing and patented Confidence Index provide unparalleled indexing performance on challenging real-world samples

**High-speed simultaneous EDS-EBSD collection**

- The Velocity EBSD Cameras have been optimized with compatible EDAX EDS detectors for efficient data collection at the highest speeds

**Conclusion**

The Velocity EBSD Camera Series provides the high-speed EBSD mapping capability combined with the accurate indexing needed to resolve crystallographic microstructures and help solve materials characterization challenges quickly and easily.