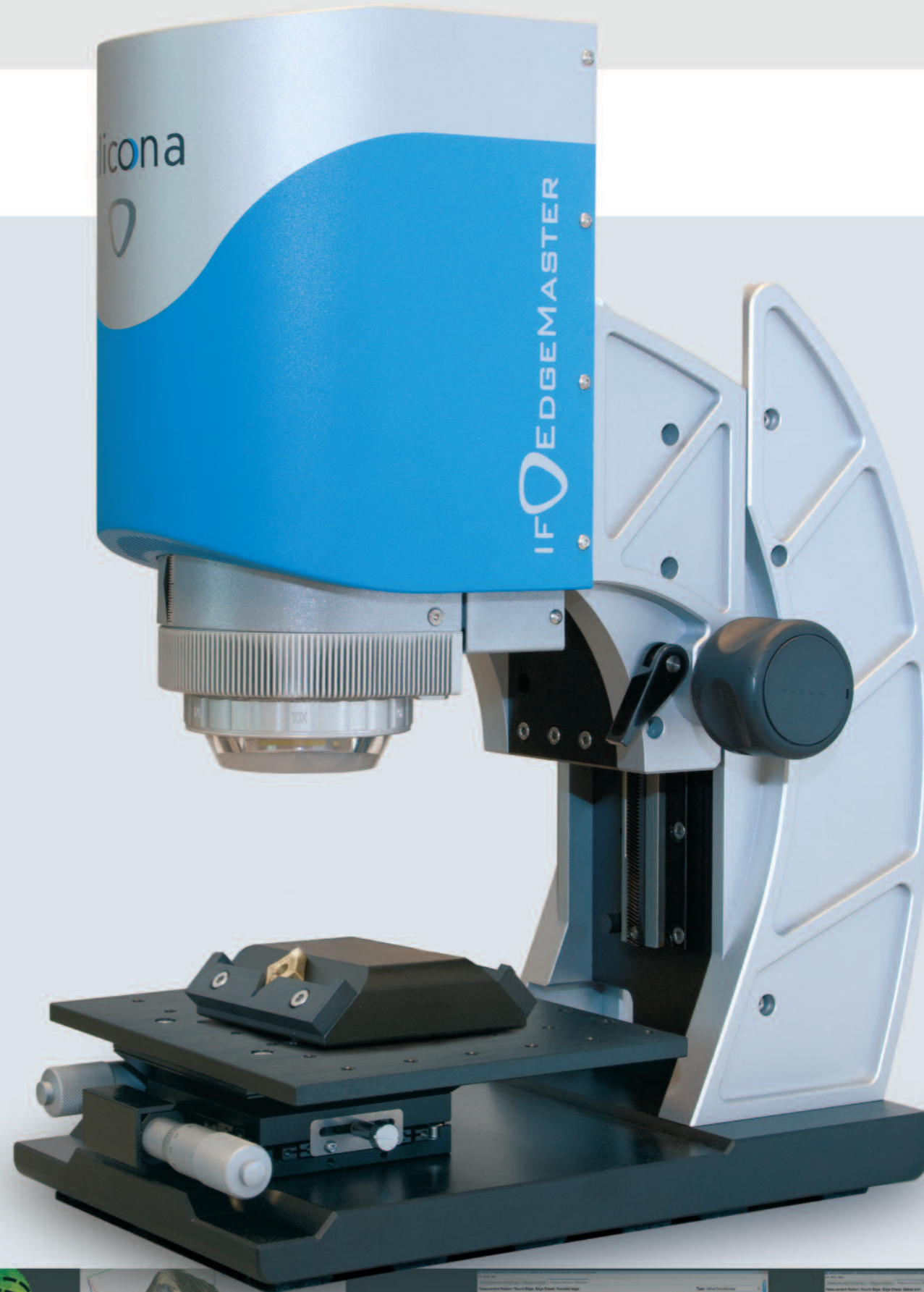


IF-EDGEMASTER

HOW TO MEASURE CUTTING EDGES OPTICALLY AND REPEATABLE ALSO IN PRODUCTION



THE SYSTEM

Automatic cutting edge measurement

The IF-EdgeMaster is an optical 3D measurement device to automatically measure cutting tools. Typically, the system is used to measure cutting edges regardless of type, size, material or surface finish of the tool. Users measure radii $> 2\mu\text{m}$ as well as rake, wedge and clearance angle of cutting edges. Both waterfall-type and trumpet-type are precisely measured. The robust technology of Focus-Variation delivers stable and traceable measurements also in a production near environment.

THE BENEFITS

Stable results include traceable roughness measurements

The IF-EdgeMaster delivers fully automatic measurements and stable results even with external vibration and external light. The system provides user friendly operation with high measurement speed. High vertical resolution enables chipping measurement and, in addition, traceable roughness measurements at the rake face of an edge. A patent pending illumination technology enables optimized illumination of surfaces with short exposure times, leading to fast measurements.

THE APPLICATION

From the green part to the polished component

Users benefit from high resolution measurements during the whole manufacturing process. The IF-EdgeMaster is used to measure the green part of a tool as well as the highly polished component in its final stage. Typically, the measurement system is used to measure inserts, drills, millers etc. Advanced visualization including registered true color information allows transparent and provable quality assurance.

THE EXPERIENCE

Applicable in both research and production

"In addition to the large variety of measurement possibilities, it was the user friendly operation of the system that convinced us in the first place. These characteristics combined with the high measurement accuracy make this device an ideal tool for our production!"

Ulrich Weber

Special Tools Construction,
SIMTEK

A range of user friendly functions in hard and software supports the high measurement accuracy, high measurement speed and intuitive user guide.

These include:

- » a coaxial laser, which enables best possible positioning and focusing of a component
- » a robust coarse drive for a quick start of the measurement and an effortless change of specimen
- » an optional motorized XY- measurement stage with integrated axis control for the accurate measurement of various components and geometries
- » a ring light with individually controllable segments based on a concentrator optics (patent pending). This provides an optimal surface illumination with high contrast and short exposure times
- » a polarizer which is activated by motorization supports the measurement of highly polished components or other surfaces with high reflective properties
- » a compact, lightweight control unit with integrated power supply for mobile and handy use
- » a robust, compact and specially designed Z-axis with integrated 5nm resolution linear scale for maximum measurement accuracy, planarity and straightness
- » a vibration-isolating frame including sensors to monitor vibrations, temperature and temperature gradients for best possible use in a production near environment

