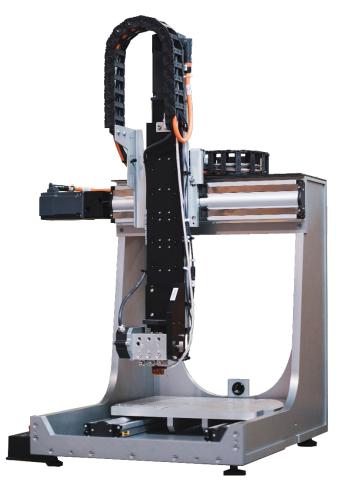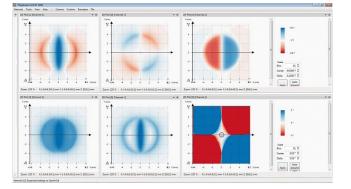**Magcam Portal Scanner**

Magcam's high speed Portal Scanner is a motorized scan stage with an integrated MiniCube3D magnetic field camera. It uses an image stitching algorithm to measure large areas at high speed. The Portal Scanner allows measuring large magnets and magnet assemblies. The scan stage is controlled automatically by the MagScope Measurement & Analysis software.

Left: Magcam Portal Scanner with 300mm x 300mm x 300mm scan range. Right: Automatically recorded and stitched magnetic field images of a large magnet.

Benefits:

- 30x faster than single sensor systems
- Fully automatic measurement procedure
- Measurements of large area magnets and assemblies
- Volume magnetic field measurement resulting from a single plane measurement
- Measurements at accurate distances from magnets
- Accurate magnet positioning
- Batch testing of magnets in trays
- Advanced data analysis through Magcam's powerful MagScope software
- High quality materials used to ensure long product lifetime

Features:

Hardware:
- XY scan range: 300mm x 300mm
- Z scan range: 300mm: this is the maximum height of the magnet/assembly under test
- Integrated MiniCube3D or MiniCube1D magnetic field camera

- Mapping speed: 120mm²/s (full resolution)
- Dimensions (LxDxH): 880mm x 1110mm x 1900/2150mm (height in transport/installed mode)
- Repeatability per axis: +/- 1.3μm
- Positioning accuracy of X and Y, and Z axes: 24μm
- Integrated calibrated positioning frame for accurately positioning magnets in a reproducible way
- PLC controller
- Automatic collision detection and protection
- Optional extension to 4-axis Combi version for Rotor Scanner
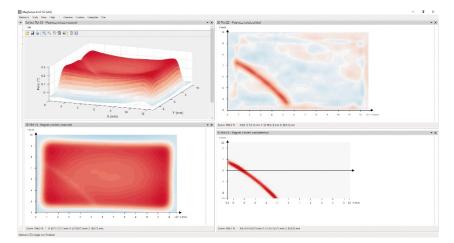- Optional high accuracy laser for sample size measurement

Software:
- The scan stage is controlled automatically by the MagScope Measurement and Analysis software.
- Automated scanning and image stitching

The stitched large area images can be analyzed in the same way as individual camera images.

Data analysis possibilities include:

- 3D magnetic field distribution
- North/south pole identification
- Field homogeneity
- Local material and magnetization defects
- Pole length/angle measurement
- North-south pole asymmetry
- Magnetization angle deviation
- Magnetization vector value
- Magnet position (4 DOF)
- Local deviations from theoretical magnet
- Radial magnetic field distribution
- Magnet misalignment
- Volumetric magnetic field
- Dimensional measurement with laser
- Fourier analysis
- Gradient analysis
- Crack detection

Crack detection example of a rectangular block magnet