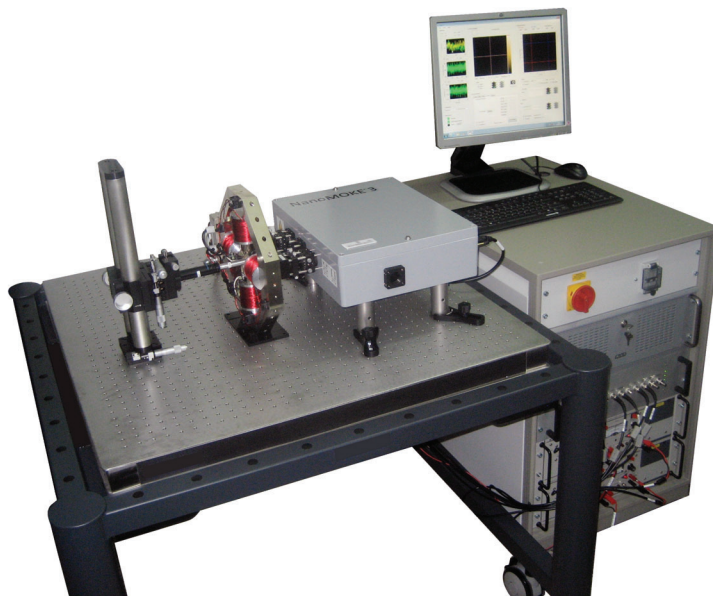


# NanoMOKE<sup>®</sup> 3

Durham Magneto Optics Ltd

**NanoMOKE<sup>®</sup> 3** is a new generation of ultra-high sensitivity magneto-optical magnetometer and Kerr microscope. Building on the success of NanoMOKE<sup>®</sup> 2, it offers high performance laser magnetometry and near video-rate Kerr microscopy in a single machine. It is sensitive to the longitudinal, transverse and polar magneto-optical Kerr effects and is ideally suited to measuring the magnetic properties of thin magnetic films and magnetic nanostructures.



The LX Pro 3 control software allows the laser to be moved so as to locate specific areas, allows complex applied field patterns to be easily generated, records hysteresis loops and allows post-processing of the loops to filter noise, remove artefacts and automatically measure key loop parameters such as coercivity and remanence. It also allows real-time display of images during rastering, capture of photographic quality images and basic image processing such as contrast-brightness correction and profile measurement. LX Pro 3 also includes a macro language which can be used to interface NanoMOKE3 to other software routines that you may wish to write and to automate complex measurements.

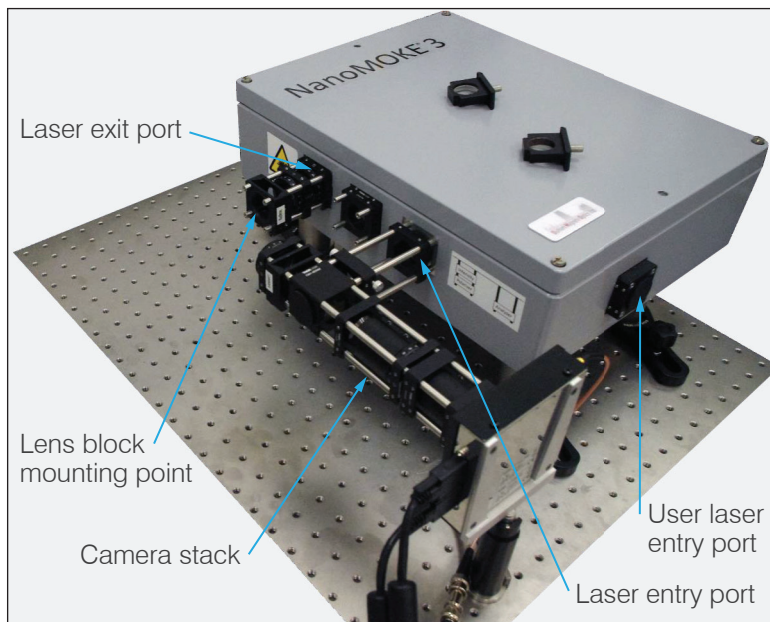
Auxiliary electronic inputs and outputs allow NanoMOKE3 to be connected to your own experimental control. The auxiliary laser input port allows NanoMOKE3 to use an existing laboratory laser instead of the built-in laser.

## Key Features and Specifications:

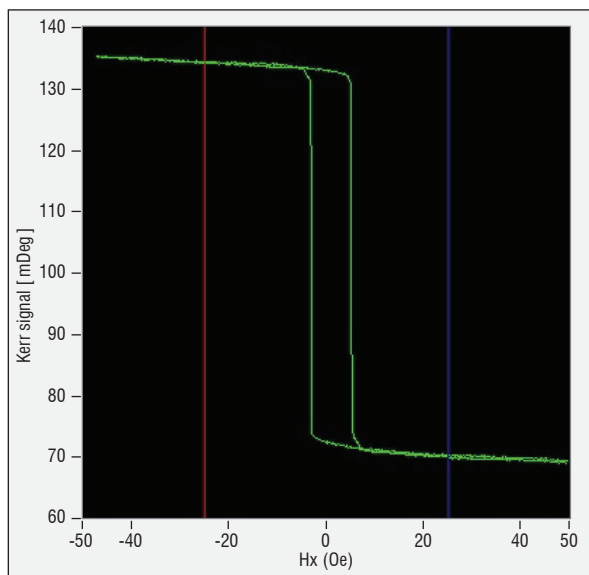
- Ultra-high sensitivity and stability
- Very low noise
- Highly focused laser spot
- Video-rate microscope to allow precise positioning of laser spot on sample and domain imaging
- Flexible optics and electronics for novel experiments
- 4 K to 500 K cryostat available as an option
- 1200 G applied field in x and y or z; 0.46 T field in x available as option
- Sensitive to Longitudinal, Transverse and Polar Kerr rotation and ellipticity
- Supplied with LX Pro, our easy to use and flexible control software

## Designed for R&D in:

- Magnetic thin films
- Magnetic nanostructures
- Magnetic tunnel junctions
- MRAM
- Hard disk read / write heads
- Spintronic devices
- Magnetic sensors
- Magnetic material development
- Magnetocaloric and thermomagnetic materials



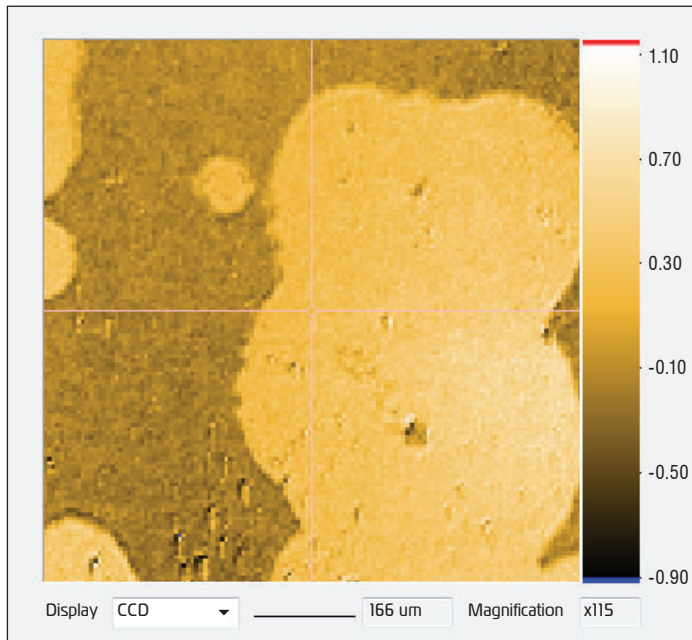
NanoMOKE® 3 incorporated into cryogen-free Montana Instruments Cryostation.



Single-shot hysteresis loop recorded from a  $30\ \mu\text{m}$  wide Permalloy microwire, measured using the longitudinal Kerr effect.

**Publications:**

- "Magnetic ratchet for three-dimensional spintronic memory and logic" *Nature* 493, 647 (2013)
- "Fast domain wall motion in magnetic comb structures" *Nature Materials* 9, 980 (2010)
- "Magnetic domain wall logic" *Science* 309, 1688 (2005)
- "Magnetic domain wall dynamics in a submicrometre ferromagnetic structure" *Nature Materials* 2, 85 (2003)



Domain imaging in a 0.6 nm continuous thin film of CoFeB, measured using the polar Kerr effect.

October 2019  
 Specifications subject to change.  
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