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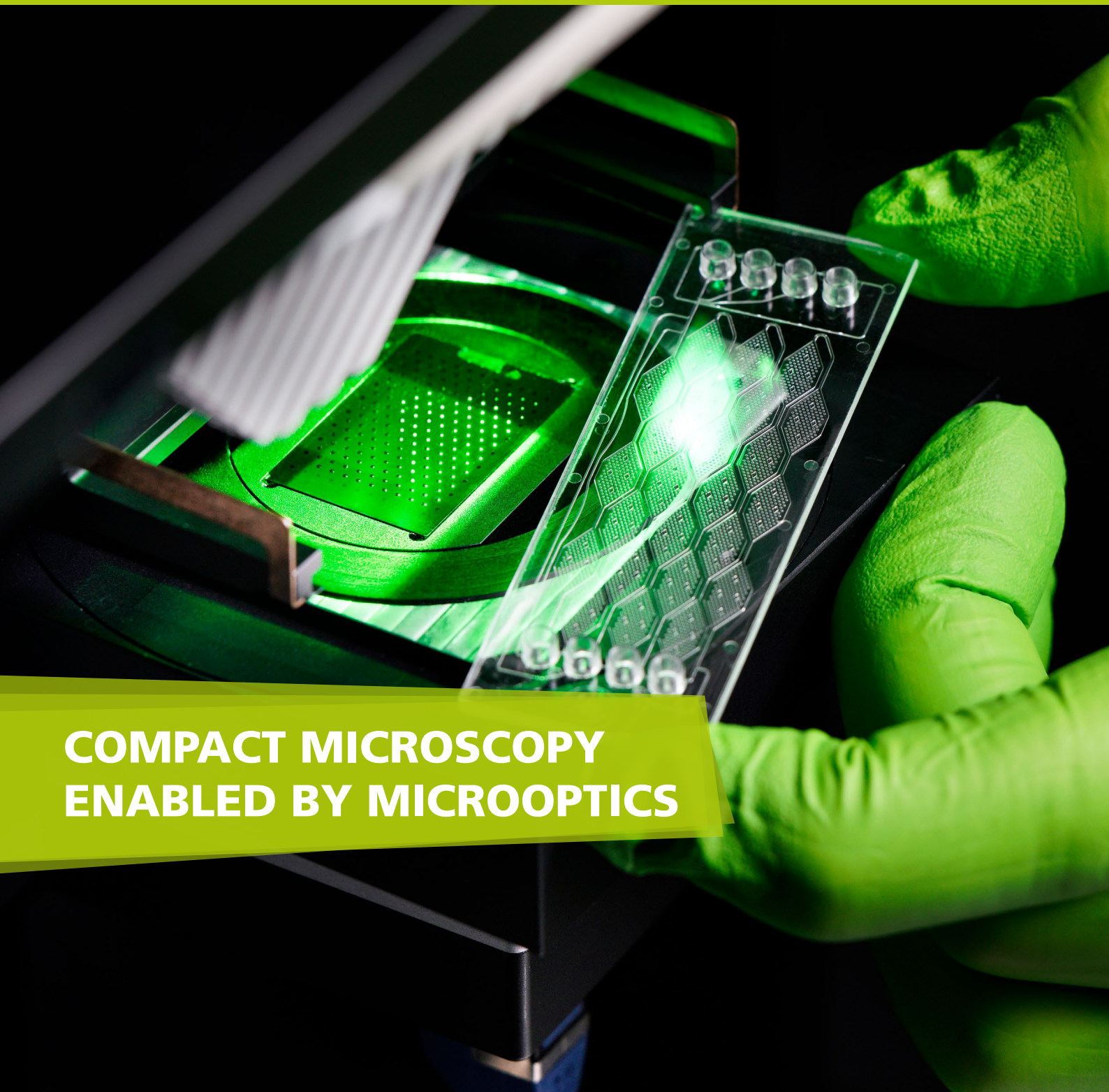
ULTRA-FLAT FLUORESCENCE MICROSCOPE



COMPACT MICROSCOPY ENABLED BY MICROOPTICS

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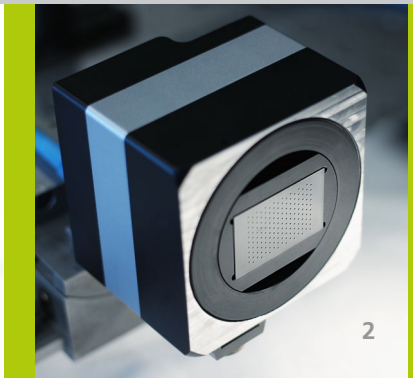

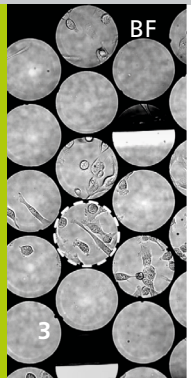

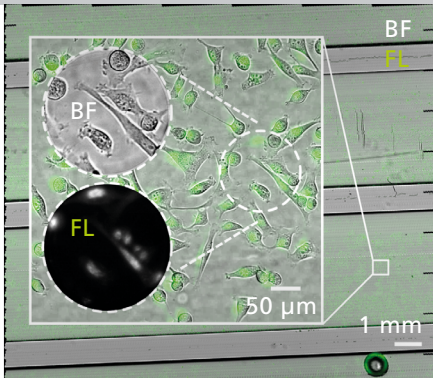

1 *Array of mini-microscope-objectives in comparison to a classical single aperture 10x objective.*

2 *Microscope array optics completely integrated in commercial camera housing.*

3 *Raw image (left) & stitched image (right) of immuno-fluorescent HeLa cells in a micro fluidic system.*
BF – bright field
FL – fluorescence

ULTRA-FLAT FLUORESCENCE MICROSCOPE WITH MULTIAPERTURE OPTICS

Ambition

Compact bright field & fluorescence microscopy system for imaging several object sub regions in parallel or scanning large object areas.

Application

- Space-saving microscopy integration
- Biomedical & micro fluidics imaging
- Parallelized microscopy
- Automated digital histology & pathology

Characteristics

- Demonstrator Parameters

numerical aperture	0.3
magnification	10x
working distance	~450 µm
resolution up to	0.55 µm

- Object field size scalable with image sensor size, but constant optics depth
- Imaging optics completely integrated in commercial camera housing
- 1D or 2D scan for large object areas
- External multi-color LED illumination system for bright field & fluorescence excitation (Cy3/Cy5)

Technology

- Array objective production on thin glass substrates via wafer-scale processing
- No active adjustment required during system assembly of filter, array objective, and image sensor
- Different scan modes & motor solution possible
- Automatic stitching of partial images to obtain a seamless large area image
- Adaptable for specific applications & illumination modes

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