



LightTech

Pioneers in photonics technology



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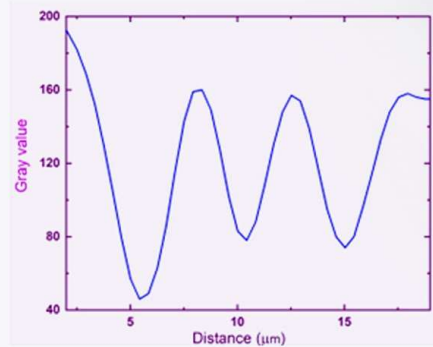
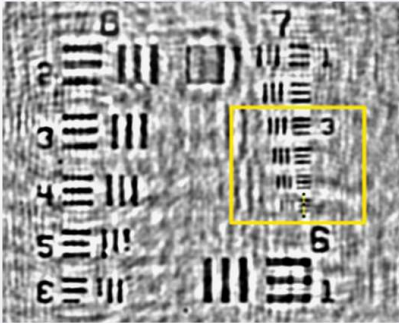
HOLOX 1

Lens-free imaging microscope

Cell Biology – Cancer Cells – Stem Cells – DRUG Discovery



Lens-free imaging



In a lens-free digital microscope, images are captured on a CMOS image sensor, and digitally reconstructed using software. Compared to conventional optical microscopes, lens-free digital microscopy removes the need for expensive and bulky optical lens components to acquire and visualize microscopy images.

HOLOX1 features a comparable micrometer-scale accuracy as traditional optical microscopes. While being much smaller and less expensive, HOLOX1 captures a larger field-of-view, enabling shorter sample processing times. The lens-free microscope paves the way to new applications with living cells and tissues.

HOLOX1 imaging microscopy solution leverages digital holographic imaging to automatically identify and classify cells, tissues and more. The system is simple, easy to integrate, customizable and generates high-resolution images (up to 1 μm) with an extremely wide field-of-view.

Features



LABEL FREE &
HIGH CONTRAST



SETTINGS FREE



HUGE FIELD
OF VIEW



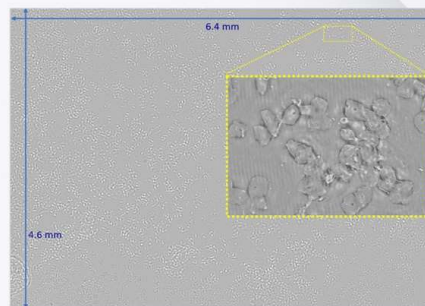
ALWAYS IN FOCUS



APPLICATIONS



- ◆ Real-Time Imaging of your cell culture
- ◆ Time-Lapses and Movies of your cells
- ◆ Confluence analysis
- ◆ Growth curves
- ◆ Migration test
- ◆ Proliferation test
- ◆ Cell morphology
- ◆ Cell population
- ◆ Cell attachment / detachment
- ◆ Cell tracking



Full field of view

TECHNICAL SPECIFICATIONS

Cells	Eucaryotic cells: adherent monolayer, suspension cell at bottom of culture ware or in micro-slides, 3D spheroids
Media	Liquid or semi-liquid (collagen)
Culture contains	Standard plastic petric dishes, culture flasks, multiwell plates, max height 55mm
Resolution	1 micron
Field of view	29.4 mm ²
Working distance	0 to 5 mm
Image rate	1.5 image/min
Light source	Green Laser
Sensor	CMOS 10 Mpixels
Weight	2 KG
Dimensions	24 x 18 x 32 cm
Power supply	USB





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SCX1

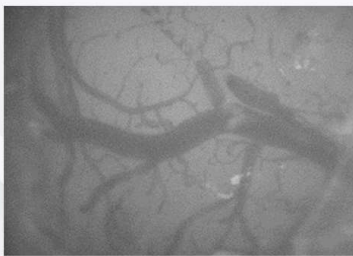
Laser Speckle Imaging System

Neurosurgery Retina Blood Flow Drug Discovery

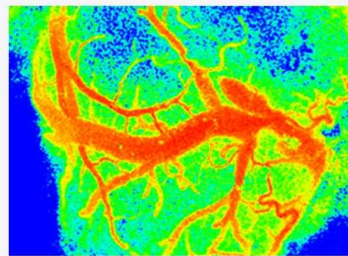


Speckle contrast imaging

Speckle flow techniques are based on the changes over time of the dynamic speckle pattern generated by motion in the sample. In these techniques, the changing speckle pattern is recorded with a camera that has an integration time in the milliseconds range. Due to the long integration time compared to the typical decorrelation time of the speckle pattern, the speckle pattern will be blurred in the recorded images. The level of blurring is quantified by the speckle contrast.



Speckle Image



Speckle Contrast Image

SCX 1 is based on the LSCI (Laser Speckle Contrast Imaging) technology. With the advantages of its non-contact, high frame-rate, high spatial resolution, and wide field-of-view, it can be used to observe and record blood perfusion of any exposed tissues or organs for microcirculation study.

This system is designed for pre-clinical microcirculation researches like ischemic stroke, retina perfusion, occlusion detection, etc. The output data includes blood perfusion images and videos, quantified data for perfusion, and vessel diameter.

The monitoring records can be exported to images and videos of speckle contrast and blood flow curves. The output data can be adjusted as required.

Features



LABEL FREE &
HIGH CONTRAST



SETTINGS FREE



HUGE FIELD
OF VIEW



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APPLICATIONS



- ◆ Cerebral blood perfusion monitoring
- ◆ Occlusion Detection
- ◆ Imaging of blood flow in the retina
- ◆ Imaging of skin perfusion (Skin burn/skin flap transplantation)
- ◆ Cortical spreading depression observation
- ◆ Imaging of stroke models
- ◆ Hind-limb ischemia research
- ◆ Organ microcirculation observation

TECHNICAL SPECIFICATIONS

Model	SCX 1
Image acquisition speed	Up to 30 FPS
Image processing speed	Up to 10 FPS
Image size	~ 40 × 30mm
Camera	CMOS(Monochromatic)
Bit depth	12 bits
Zoom range	4.5× optical zoom (no need to exact focus)
Image camera	4 Megapixels(2048 × 2048)
Monitoring laser	Red - 650 nm (IR laser can also be implemented)
Laser power	Less than 10mW (per cm ²)
Minimum Detectable Blood Flow Diameter	10 micron
Temporal Resolution	100-1ms
Imaging Depth	~ 1 mm
Data	Image, Video, Curve



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