

High Speed Digital Microscope



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Part No.	Part Description	#
3200531	High Speed Digital Microscope	1

Description

The Meros High Speed Digital Microscope is designed specifically for microfluidics and is ideal for observing droplets during high speed droplet production. The high speed, high resolution imaging and convenient stage greatly simplify microfluidic experiments.

The easy to use stage securely holds a wide range of microfluidic equipment for reliable viewing including microfluidic chips, connectors and the μ Encapsulator 1 Module (Coaxial Illumination from Microscope; part no. 3200519). With the benefit of extra long working distance, the High Speed Digital Microscope enables optical access to samples which would normally be difficult to view. Illumination from above leaves the underside of the microfluidic device free for temperature control and is compatible with the Meros TCU-100 (part no. 3200428).

High magnification optics and the zoom lens ensure that micro-scale features can be visualised clearly. The integrated coaxial lighting system offers exceptional brightness for image capture at very low exposure times. Coupled with the high speed USB3.0 camera, the lighting and optics provide the capability to capture still images or videos of microfluidic material moving at kHz rates.

Flow Control Centre software is included for observation, image adjustment and image capture.



Benefits

- High quality optics with high resolution imaging for clear visualisation of microfluidic experiments
- High power LED coaxial illumination for high speed microscopy
- Low exposure time for image capture of droplets, particles or cells flowing at kHz rates
- Capture high frame rate videos of microfluidic events
- Light brightness adjustment with the option for diffused light with the reversible mirror
- Extra long working distance for use with difficult to reach regions of interest
- Zoom function for viewing of features from the mm to μm scale
- Convenient stage that securely holds a wide range of microfluidic devices
- Compatible with the TCU-100 (part no. 3200428) for imaging and temperature control of the microfluidic device
- Can be controlled via our free Flow Control Centre software.

System Specifications

Specification	
Minimum field of view (maximum zoom)	0.55 x 0.44 mm (approx.)
Maximum field of view (minimum zoom)	3.86 x 3.09 mm (approx.)
Objective lens magnification	5X
Zoom ratio	6:1
Working distance	45 mm
Number of pixels/micron at maximum zoom	2.3
LED Luminous Flux ⁽¹⁾	4000 lumens
LED colour	Cool white
LED wavelength	400 – 800 nm
Imaging device	1.3 Megapixel colour camera, 1/2" CMOS sensor
Resolution	1280 x 1024 pixels
Minimum Shutter time	0.05 ms

Frame rate ⁽²⁾	~150 fps @ 1280 x 1024 ~506 fps @ 640 x 480 ~1,500 fps @ 320 x 240 ~4,100 fps @ 160 x 96
Still image file type	.bmp
Video image file type	.avi
PC connection	USB 3.0
System dimensions ⁽³⁾	260 x 318 x 490 mm (W x L x H)
Stage dimensions	107 x 187 x 52 mm (W x L x H)
Supply voltage and frequency	80 – 264 VAC, 47 – 63 Hz

(1) Specification for output of LED light source at the LED

(2) Frame rates will vary based on host system and configuration

(3) System height is approximate and will be increased if microscope is adjusted above height of pole for larger samples

IP License

Dolomite is a licensee of Japan Science and Technology Agency (“JST”) under JST’s microdroplet generation technology.

This enables our customers to purchase and use our droplet chips for R&D purposes without any restriction from this comprehensive IP family.

Contact us for more information about licensing this IP for your custom application or chip design.

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