3201107 - Dolomite Imaging Pack

Product Datasheet

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2 Description

The High-Speed Microscope and Camera 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 as shown in Figure 1., connectors and the µEncapsulator 1Module as shown in Figure 2. With the benefit of extra long working distance, the High-Speed 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. 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.

Figure 1. One microfluidic chip is loaded on the stage.

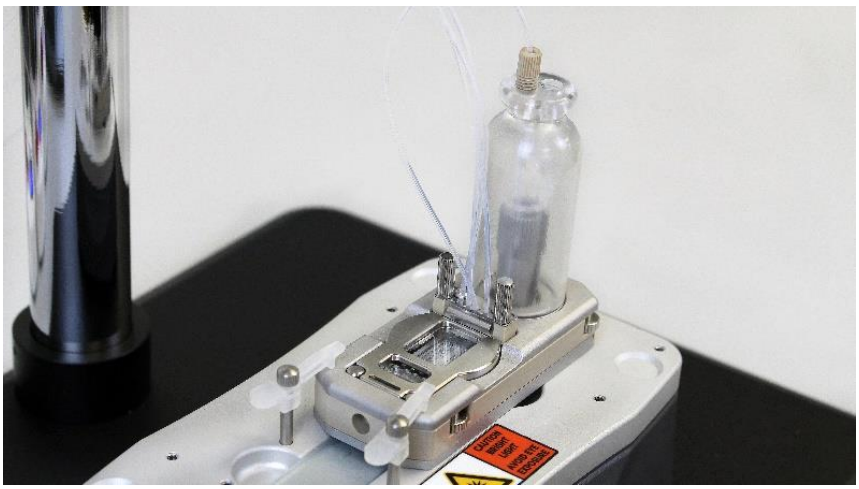

Figure 2. µEncapsulator 1Module on the stage.

3 Pack Components and Part Numbers

The Dolomite Image Pack is supplied with:

- 1 x High-Speed Microscope and Camera
- 1 x X-Y Stage for High-Speed Microscope and Camera

4 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 for imaging and temperature control of the microfluidic device
- Can be controlled via our free Flow Control Centre software.

5 System Specifications

Specification	
Minimum field of view	0.55 x 0.44 mm (approx.)
Maximum field of view	3.86 x 3.09 mm (approx.)
Objective lens magnification	5X
Zoom ratio	6:1
Working distance	45 mm
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
LED Luminous Flux [(1)]	4000 lumens
Wetted Material	Glass, FEP (tubing), FFKM, FKM, PEEK and PTFE

Tubing Dimensions	1/16” OD x 0.25 mm ID
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