High Speed Imaging System

Introduction:

Microfluidic research is continuously promoting the growth and development of new technologies that require less chemicals and physical space while offering faster analyses or processes. The reduced scale of time and space makes microfluidic events become too fast to analyze with standard cameras. The high speed, high-resolution imaging, and convenient microscope system significantly improves study quality of microfluidic experiments.

PreciGenome high-speed imaging system enables researchers to capture images at a speed high enough to be capable of seeing details of fluid action in microfluidics studies. Depending on the desired resolution, our high-speed cameras can reach up to 38,000 FPS.

System Benefits:

- Plug & Play microscope system with an integrated high-speed camera.
- High speed with full resolution of 1280x1024 @ >1050fps , up to 38000fps at lower resolution.
- High-quality optics with high-resolution imaging for clear visualization of microfluidic experiments.
- High system magnification and zoom function for viewing from the mm to µm scale.
- 3 different types of illumination for most applications.
- Exposure time down to 1µs for imaging of droplets, particles or cells flowing at up to MHz frequency.

- Can be controlled via Precigenome PG-MFC controller.
- Reliable and easy to use with touch screen and external monitor via HDMI interface.
- Customer design options (fluorescence detection, higher magnification, etc.) available upon request.

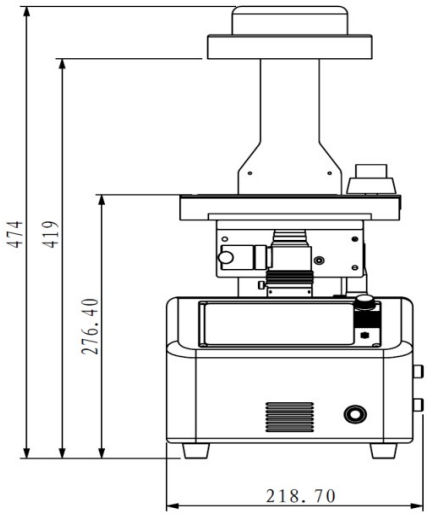
System Specifications:

Specifications	PG-HSV-M	PG-HSV-M-X (Custom Design)
Magnification	0.94X-6.0X; manual adjustment.	Higher maginfication options
Illuminations	Ring light, coaxial illumination, backlight illumination; brightness adjustment knobs	Custom design
Working distance (mm)	36(nominal), 36-37 range (manually adjustable)	Custom design
Resolution & speed	1280x1024 @ >1050 fps, 1280*96@11110 fps, 640*96@21600 fps, up to 38000fps at lower resolution	1280x1024 @ >1050 fps, 1280*96@11110 fps, 640*96@21600 fps, up to 38000fps at lower resolution
Video format	H.264, cinemaDNG Raw	H.264, cinemaDNG Raw
Camera internal memory	16GB	Up to 32GB
Display	5" touchscreen, external screen via HDMI interface	5" touchscreen, external screen via HDMI interface
Imaging device	1.3 Megapixel monochrome camera, CMOS sensor with 6.6um pixel pitch	Color camera option
Shutter	Electronic global shutter, 1µs to 1s	Electronic global shutter, 1µs to 1s
Dynamic range	>56 dB	>56 dB
Bit depth	12-bit	12-bit
IO control	Trigger inputs; Able to be controlled via PG-MFC controller	Custom design
Other interfaces	SD card, HDMI, USB	SD card, HDMI, USB
XYZ translational stage range	X: >100mm; Y:>100mm; Z: 25mm, 10um resolution	Custom design

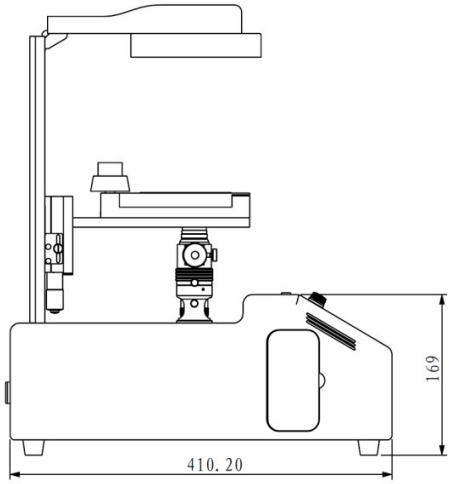
Dimensions:

Unit: mm

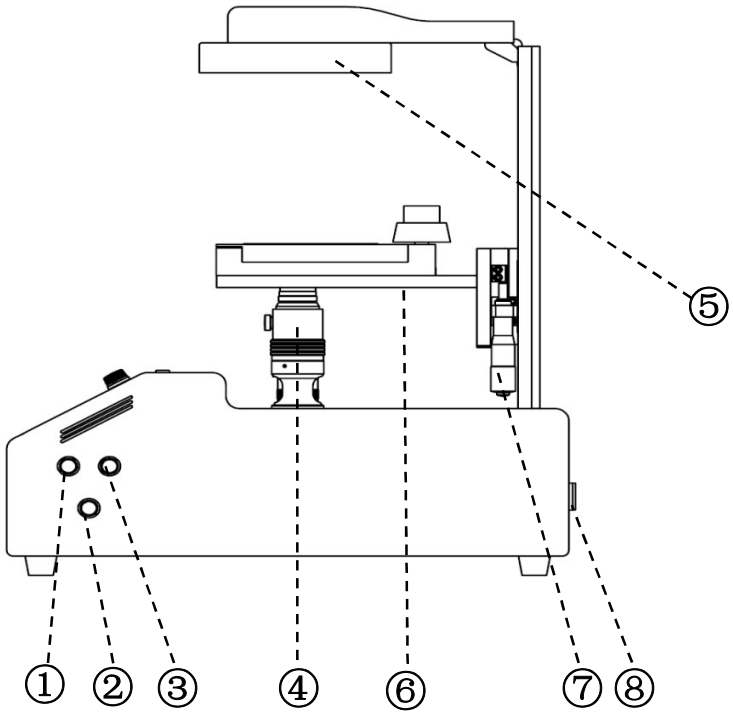
Front View



Side View (left)



Knobs & Connectors:



1	Control knob for ring illumination	5	Ring light and top spotlight
2	Control knob for top spotlight illumination	6	XYZ motion stage
3	Control knob for inline illumination	7	Z motion control knot
4	Zoom lens with inline illumination	8	Power