Summary of Technical Specifications - BMS USB Cameras

BMS Microscopes

The BMS USB cameras are high-performance imaging solutions for bright-field microscopy and precise image capture. They use advanced CMOS sensors in a compact, durable zinc-aluminum alloy housing.

QUICK EXPLANATIONS

- **CMOS (Complementary Metal-Oxide-Semiconductor):** Converts light into electronic signals for high-quality imaging with fast readout and low power consumption.
- **USB2** → Slower transfer (~480 Mbps) Suitable for moderate frame rates.
- **USB3** → Faster transfer (~5 Gbps) For high-resolution, high-frame-rate imaging.
- **MP (Megapixel):** Number of pixels in an image; more MP increases resolution, giving finer detail and sharper **results.**

BMS USB2 vs USB3 – Key Differences

Data Interface	USB 2.0 (~480 Mbps)	USB 3.0 (5 Gbps)
Hardware Resolution	0.35M – 14M	3.0M – 18M
Frame Rate	Moderate frame rate	High frame rate

	Sensor & Size	Pixel(μm)	G Resp/Dyn Range/SNR	FPS/Resolution	Exposure
USB2	**1.3MP** 1/3“/4.60 x 3.70	3.6 x 3.6	1.0V/lux-sec 71dB/44dB	15@1280x1024 50@320x256	0.14ms~2000ms
	3.1MP 1/3"/4.51×3.38	2.2 x 2.2	1.9 V/lux-sec 100dB/39 dB	27.3@2048×1534 53.3@1024×770	0.1ms~2000ms
	5.1MP 1/2.5“/5.70 x 4.28	2.2 x 2.2	0.53 V/lux-sec 66.5dB/40.5dB	5@2592x1944 60@640x480	0.294ms~2000ms
	10MP 1/2.3“/5.98 x 4.59	1.67 x 1.67	0.31v/lux-sec 65.2dB/34dB	1.9@3584x2748 27@896x684	0.4ms~2000ms
USB3	**3.1MP** 1/3“/4.51 x 3.38	2.2 x 2.2	1.9v/lux-sec 100dB/39dB	27.3@2048x1534 53.3@1024x770	0.1ms~2000ms
	5.1MP 1/2.5“/5.70 x 4.28	2.2 x 2.2	1.76v/lux-sec 67.74dB/38.5dB	14.2@2560x1922 101.2@640x480	0.1ms~2000ms
	10MP 1/2.3“/5.98 x 4.58	1.67 x 1.67	0.31v/lux-sec 65.2dB/34dB	7.2@3584x2746 24.5@1792x1372	0.4ms~2000ms
	25MP 1/2.3“'/5.70 × 4.28	1.67 × 1.67	0.43v/lux-sec 70dB/44dB	15@5120×5120 41@2560×2560	0.2ms~2000ms

General Specifications BMS cameras: USB2 & USB3

Sensor Type
Ultra-high performance Aptina CMOS sensor

Mount
C-mount

Housing
Integrated zinc-aluminum alloy compact housing

Application & Software
Advanced video & image processing (BMS_pix3)

SDK Support
Windows/Linux/macOS multiple platform SDKs

Usage
Suitable for bright field microscopy and image capture/analysis

Binning
1x1, 2x2, 4x4

White Balance
ROI White Balance
Manual Temp Tint Adjustment
NA for Monochromatic Sensor

Spectral Range
380–650 nm (with IR-cut Filter)

Color Technique
Ultra-Fine™ Color Engine
NA for Monochromatic Sensor

Capture/Control API
Native C/C++, C#/VB.NET, DirectShow, Twain and Labview

Recording System
Still Picture and Movie

Cooling System
Natural

Operating Temperature
-10 ~ 50 °C

Storage Temperature
-20 ~ 60 °C

Operating Humidity
30 ~ 80% RH

Storage Humidity
10 ~ 60% RH

Power Supply
DC 5V over PC USB Port

Software Environment & download link

Operating System
- Microsoft® Windows® XP / Vista / 7 / 8 /10 (32 & 64 bit)
- OSx (Mac OS X)
- Linux

PC Requirements CPU
- Equal to Intel Core2 2.8GHz or Higher
- Memory: 2GB or More
- Display: 17” or Larger

http://extern.bmsmicroscopes.com/BMS_pix3/BMS_pix3.zip