

AUTOFOCUS MACRO MICROSCOPES

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BMM Autofocus Macro Microscope

1. BMM-1080P2MPA Autofocus Digital Macro Microscope



Introduction

BMM is the abbreviation of BestScope Macro Microscope. Different products in the BMM series can be formed with different part to satisfy various application requirement. BMM is a series of electric controlled continuous zoom and autofocus all-in-one digital macro microscope with a large field of view. It is integrated with HDMI camera, Electric Controlled Continuous Zoom Auto-focus Objective and LED Integrated ring Light.

BMM-1080P2MPA comes with BMM-1080P2MPA HDMI camera, BMM-20X lens and BRL-8A light source(Optional); The camera use an embedded ARM core, allowing the camera to be connected directly to the HDMI monitor. The camera has XFCAMView software built within it, including Camera Control Panel, Auto Focus Control Panel, Measurement Toolbar, and Synthesis Camera Control Toolbar. Users can directly control the camera and perform various operations through a USB mouse. The images and videos captured by BMM-1080P2MPA can be saved on an SD card for on-site analysis and follow-up research.

BMM-1080P2MPA can be widely used in industrial inspection, medical observation, teaching and scientific research, automation system, and other fields.



BMM-1080P2MPA's front and back view



BMM-1080P2MPA's side and front(with LED light) view

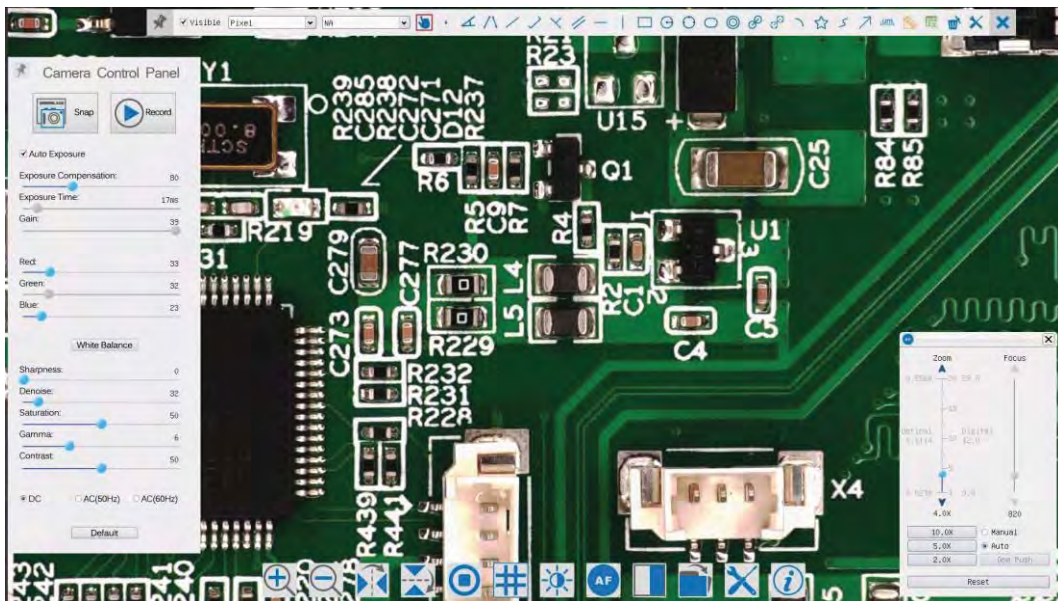
Feature

The **BMM-1080P2MPA** comes with **BMM-1080P2MPA HDMI** camera, **BMM-20X** lens and **BRL-8A** light source(**Optional**);
The Basic Characteristic of BMM-1080P2MPA:

1. 5 groups 16 elements lens with 0.028~0.56X, 20X zoom ratio, supports auto and manual focus;
2. 195mm standard working distance with 150~195mm depth of field;
3. At standard working distance, the large field of view 200mm*112.5mm at low magnification, helping users to quickly locate the target object, the small field of view 10mm*5.6mm at higher magnification, helping users to observe microscopically.
4. Sony 1/2.8" 1080P CMOS with high signal-to-noise ratio;
5. Connect to HDMI monitor with 1080P@60FPS video format;
6. SD card storage supports 1080P pictures and video streams(asf format);
7. Built-in mouse control software XFCAMView, all functions can be realized with USB mouse;
8. Embedded mouse Camera Control Panel, Measurement Toolbar, Synthesis Control Toolbar, AF Control Panel;
9. Multi-language support;
10. Head suction LED ring light, the brightness can be directly controlled by XFCAMView;
11. With the adapter bracket of 76mm diameter, a electric controlled continuous zoom BMM-1080P2MPA can be built.



BS-210A(bracket)+BMM-1080P2MPA+1080P monitor



Built-in XFCAMView software and Its Control UI

Specification

BMM-1080P2MPA Camera Module Datasheet

Order Code	Sensor & Size(mm)	Pixel(μm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure(ms)
BMM-1080P2MPA	Sony IMX462LQR-C 1/2.8"(5.57x3.13)	2.9x2.9	921/0.15mv with 1/30s	60/1920*1080 (HDMI)	1x1	0.06~918

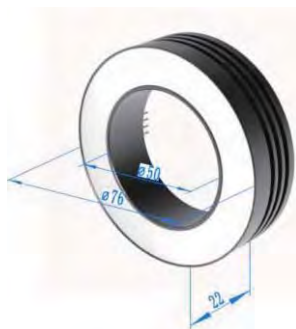
C: Color; M: Monochrome;

BMM-1080P2MPA Lens Module Datasheet

Order Code	Working Distance(mm)	Zoom Range	MTF(lp/mm)	Distortion	FOV@1X(mm)	FOV@20X(mm)
BMM-20X	150~195	0.028X~0.56X	160	0.5%	200x112.5	10x5.6

1X and 20x are defined as the normalized magnification, which is only used to represent the relative relationship between the lowest and highest magnification. Here, the normalized equation $1x = 0.028/0.028$; $20X = 0.56/0.028$;

BMM-1080P2MPA Light Module



BRL-8A LED Ring Light

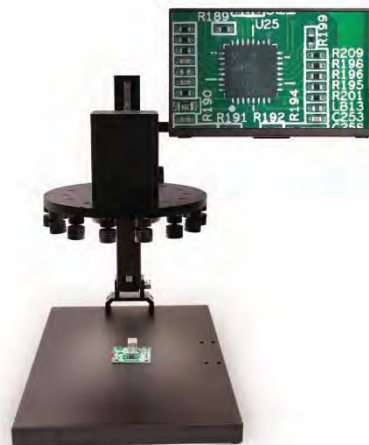
Order Code	LED	Power	Inner Dia.(mm)	Out Dia.(mm)
BRL-8A	8 CREE xpes	3V/3A	50	76

BRL: BestScope LED ring light with adjustable brightness;

BMM-1080P2MPA can use BRL-12A as external light for the large FOV illumination




BRL-12A LED light



BS-210A(bracket)+BMM-1080P2MPA(with BRL-12A)+4K Monitor

Specification of BMM-1080P2MPA

Interface & Button Functions	
USB Mouse	USB mouse for XFCAMView control
USB2.0	USB keyboard or other USB control device
HDMI	HDMI output
ON/OFF	Power on/off switch
LED	Power LED indicator
SD	SD card slot

	<p>DC12V3A</p>	<p>DC12V3A power input</p>
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Software Functions

<p>UI Operation</p>	<p>With USB mouse to operate on the embedded XFCAMView</p>
<p>Image Capture</p>	<p>JPEG format with 2M Resolution in SD card</p>
<p>Video Record</p>	<p>ASF format 1080P 30fps in SD card</p>
<p>Camera Control Panel</p>	<p>Including Exposure, Gain, White Balance, Color Adjustment, Sharpness and Denoising control</p>
<p>Measurement Toolbar</p>	<p>Including Calibration, Measurement, and measurement parameter Export functions</p>
<p>Synthesis Control Toolbar</p>	<p>Including software Zoom, Flip, Freeze, Crosshair, LED Control, Auto-focus, Comparison, Browser, Setting, Version Check function</p>
<p>Auto Focus Control Panel</p>	<p>Including Zoom, Auto Focus, One Push, Manual Focus, Reset, and other functions</p>

Operating Environment

<p>Operating Temperature(in Centidegree)</p>	<p>-10~ 50</p>
<p>Storage Temperature(in Centidegree)</p>	<p>-20~ 60</p>
<p>Operating Humidity</p>	<p>30~80%RH</p>
<p>Storage Humidity</p>	<p>10~60%RH</p>

Dimension

<p>Length x Width x Height</p>	<p>80mm x 80mm x 80mm</p>
<p>Shipping Weight</p>	<p>0.75kg</p>

Software ImageView Environment under LAN/WLAN/USB Video Output

<p>White Balance</p>	<p>Auto White Balance</p>
<p>Color Technique</p>	<p>Ultra-Fine Color Engine</p>
<p>Capture/Control SDK</p>	<p>Windows/Linux/macOS/Android Multiple Platform SDK(Native C/C++, C#/VB.NET, Python, Java, DirectShow, Twain, etc)</p>
<p>Recording System</p>	<p>Still Picture or Movie</p>
<p>Operating System</p>	<p>Microsoft® Windows® XP / Vista / 7 / 8 / 8.1 /10(32 & 64 bit)/ View OSx(Mac OS X)/ Lite Linux/ Lite</p>
<p>PC Requirements</p>	<p>CPU: Equal to Intel Core2 2.8GHz or Higher</p>
	<p>Memory: 4GB or More</p>
	<p>Ethernet Port: RJ45 Ethernet Port</p>
	<p>Display:19" or Larger CD-ROM</p>

Operating Environment

<p>Operating Temperature(in Centidegree)</p>	<p>-10~ 50</p>
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Storage Temperature(in Centidegree)	-20~ 60
Operating Humidity	30~80%RH
Storage Humidity	10~60%RH
Dimension	
Length x Width x Height	80mm x 80mm x 80mm
Shipping Weight	0.75kg

Dimension



Dimension of BMM-1080P2MPA

Packing Information



Packing information of BMM-1080P2MPA

Standard Packing List			
A	Gift box: L:220cm W:220cm H:110cm (1pcs, 2.0kg/box)		
B	BMM-1080P2MPA		
C	USB Mouse		
D	HDMI Cable		
E	<table border="1"> <tr> <td>Power Adapter: Input: AC 100~240V 50Hz/60Hz, Output: DC 12V 3A</td> <td> American Standard: Model: HKA03612030-7K: UL/CE/FCC (With American Standard AC Power Cable) European Standard: Model: HKA03612030-7K: UL/CE/FCC (With European Standard AC Power Cable) EMI Standard: FCC Part 15 Subpart B EMS Standard: EN61000-4-2,3,4,5,6 </td> </tr> </table>	Power Adapter: Input: AC 100~240V 50Hz/60Hz, Output: DC 12V 3A	American Standard: Model: HKA03612030-7K: UL/CE/FCC (With American Standard AC Power Cable) European Standard: Model: HKA03612030-7K: UL/CE/FCC (With European Standard AC Power Cable) EMI Standard: FCC Part 15 Subpart B EMS Standard: EN61000-4-2,3,4,5,6
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Optional Accessory			
F	LED Ring Light(BRL-8A)		
G	SD card(16G)		

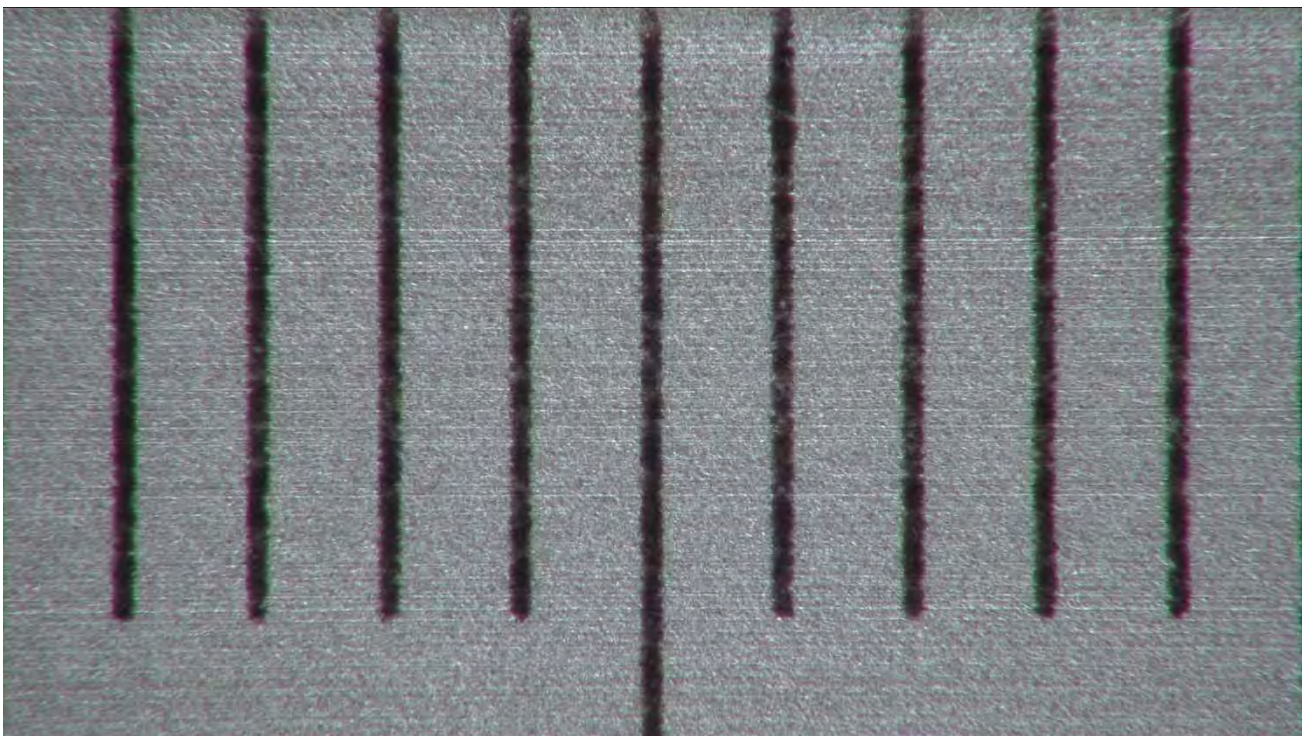
Sample Images



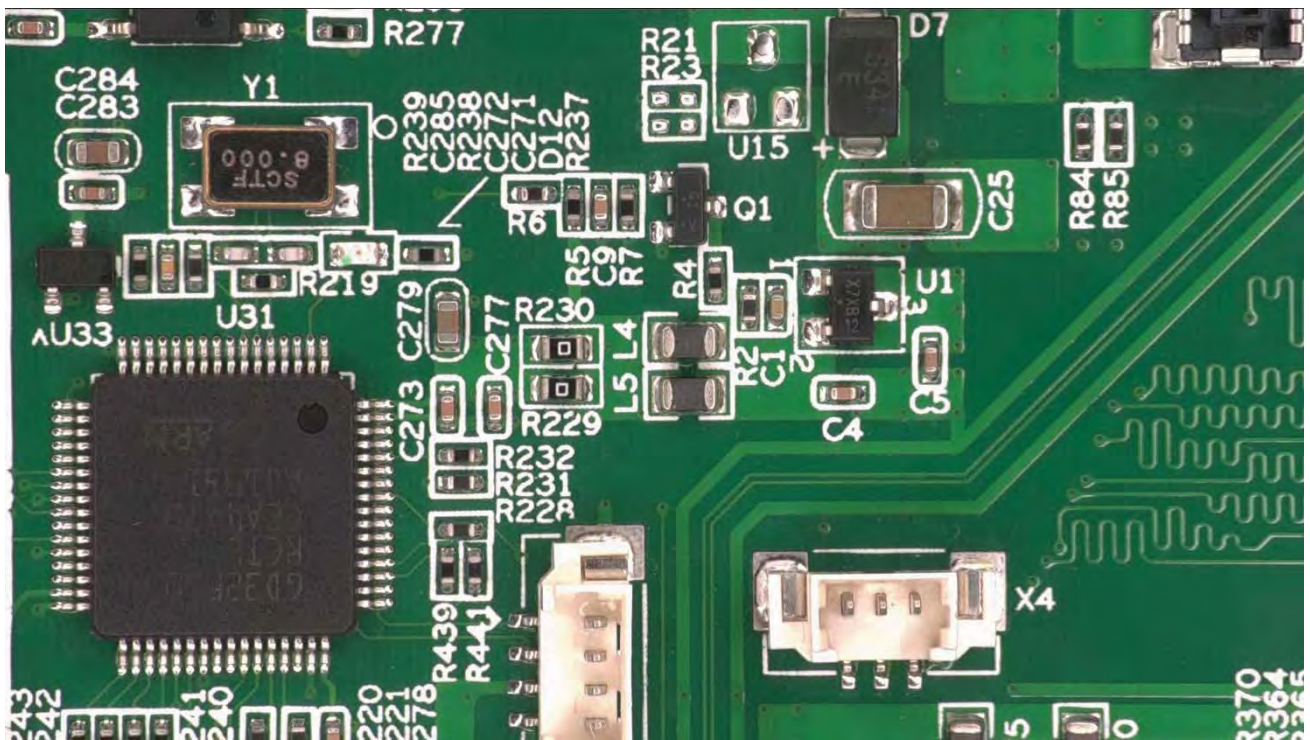
Ruler captured with BMM-1080P2MPA at 1X



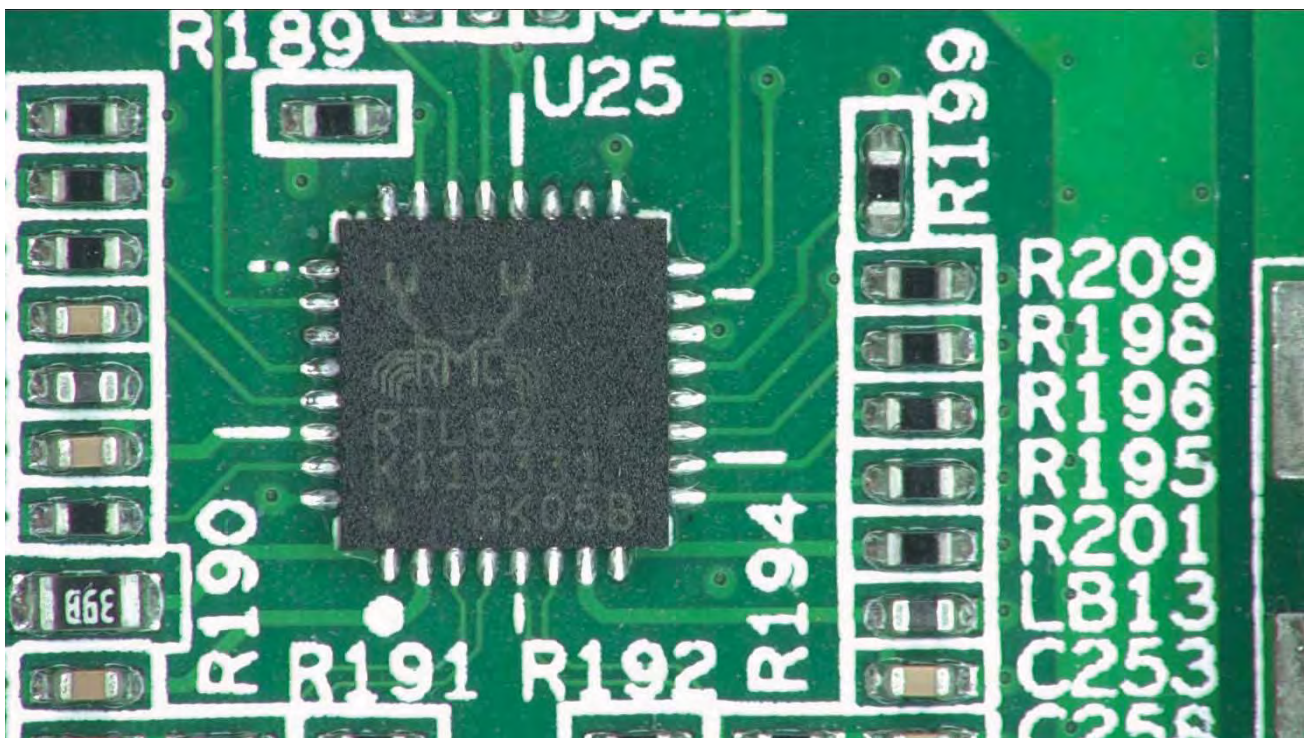
Ruler captured with BMM-1080P2MPA at 10X



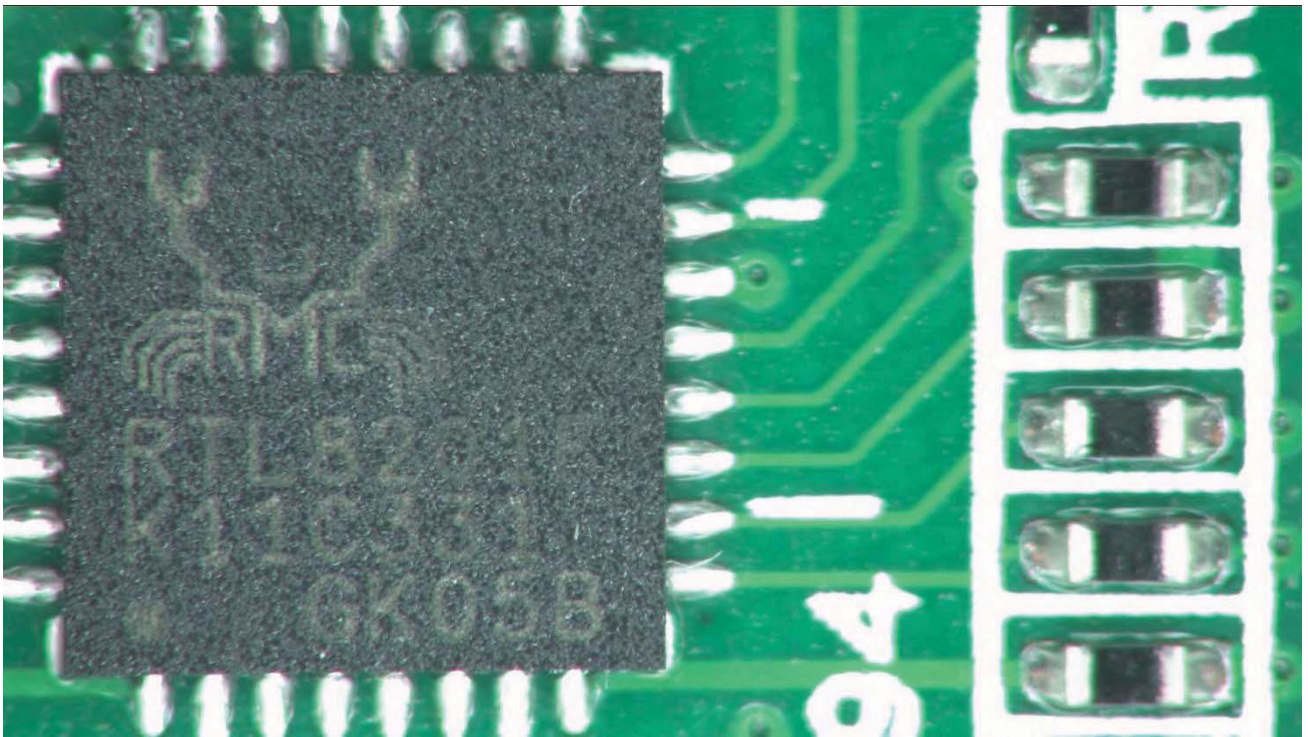
Ruler captured with BMM-1080P2MPA at 20X



PCB captured with BMM-1080P2MPA at 4.0X



PCB captured with BMM-1080P2MPA at 10X



PCB captured with BMM-1080P2MPA at 20X

2. BMM-4K8MPA Autofocus Digital Macro Microscope



Introduction

BMM is a series of electric controlled continuous zoom and autofocus all-in-one digital macro microscope with a large field of view. It is integrated with HDMI camera, Electric Controlled Continuous Zoom Auto-focus Objective and LED Integrated Illumination Light. BMM is the abbreviation of BestScope Macro Microscope. Different products in the BMM series can be formed with different part to satisfy the application requirement.

BMM can be assembled with various brackets or arms and offer a continuous zooming ratio with different lens. BMM also supports autofocus mode and manual focus mode.

BMM comes with a high-performance SONY CMOS sensor. It also has an embedded ARM core, allowing the camera to be connected directly to the HDMI monitor. The camera has XFCAMView software built within it, including Camera Control Panel, Auto Focus Control Panel, Measurement Toolbar, and Synthesis Camera Control Toolbar. Users can directly control the camera and perform various operations through a USB mouse. The images and videos captured by BMM can be saved on an SD card for on-site analysis and follow-up research.

BMM can be widely used in industrial inspection, medical observation, teaching and scientific research, automation system, and other fields.

BMM-4K8MPA supports 4K30FPS HDMI output and USB/ LAN/WIFI outputs.



BMM-4K8MPA's front and back view



BMM-4K8MPA's side and front (with LED light) view

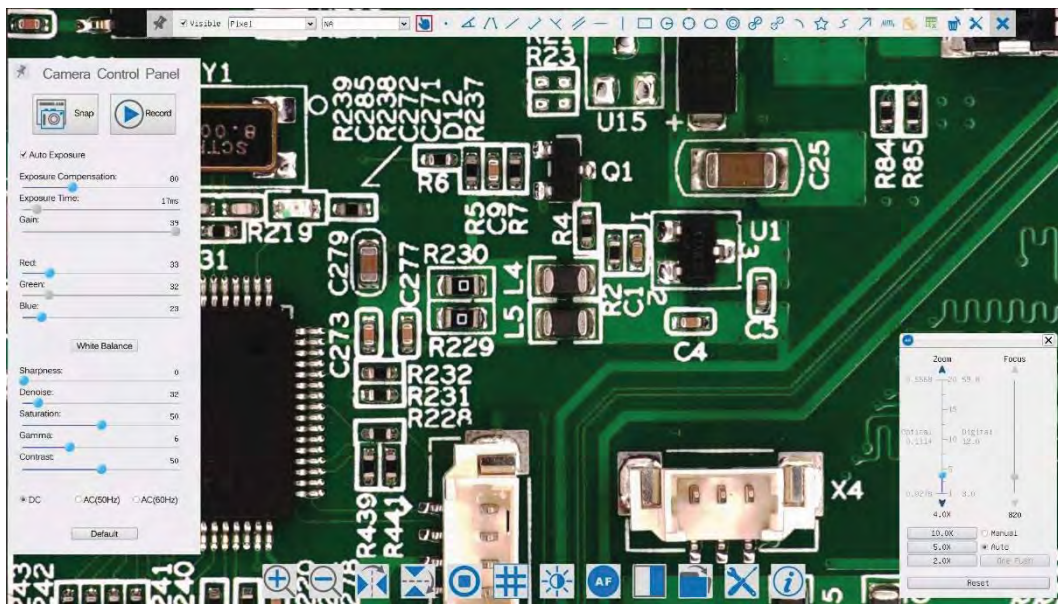
Feature

The **BMM-4K8MPA** comes with **BMM-4K8MPA HDMI** camera, **BMM-20X** lens and **BRL-8A** light source(**Optional**);
The Basic Characteristic of BMM-4K8MPA:

1. 5 groups 16 elements lens with 0.028~0.56X, 20X zoom ratio, supports auto and manual focus;
2. 195mm standard working distance with 150~195mm depth of field;
3. At standard working distance, the large field of view 200mm*112.5mm at low magnification, helping users to quickly locate the target object, the small field of view 10mm*5.6mm at higher magnification, helping users to observe microscopically;
4. Sony 1/2.8" 4K Starvis CMOS with high signal-to-noise ratio;
5. 4K HDMI/USB/ETH/WiFi multiple video outputs;
6. 4K/1080P auto switching according to monitor resolution;
7. SD card/USB flash drive for captured image and video storage, support local preview and playback;
8. Built-in mouse control software XFCAMView, all functions can be realized with USB mouse;
9. Embedded mouse Camera Control Panel, Measurement Toolbar, Synthesis Control Toolbar, AF Control Panel;
10. Multi-language support;
11. Head suction LED ring light, the brightness can be directly controlled by XFCAMView;
12. With the adapter bracket of 76mm diameter, a electric controlled continuous zoom BMM can be built.



BS-210A(bracket)+BMM-4K8MPA+1080P Monitor



Built-in XFCAMView software and Its Control UI

Specification

BMM-4K8MPA Camera Module Datasheet

Order Code	Sensor & Size(mm)	Pixel(μm)	G Sensitivity Dark Signal	FPS/Resolution	Bin n in g	Exposure(ms)
BMM-4K8MPA	Sony IMX415LQR-C	1.45x1.45	300mv/0.13 with 1/30s	30@3840*2160(HDMI) 30@3840*2160(NETWORK)	1x1	0.04~1000

	1/2.8"(5.57x3.13))		
			30@3840*2160(USB)		

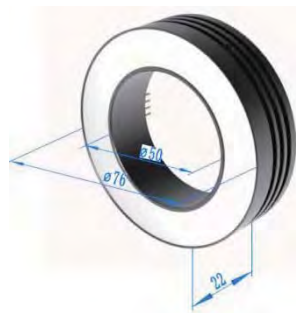
C: Color; M: Monochrome;

BMM-4K8MPA Lens Module Datasheet

Order Code	Working Distance(mm)	Zoom Range	MTF(lp/mm)	Distortion	FOV@1X(mm)	FOV@20X(mm)
BMM-20X	150~195	0.028X~0.56X	160	0.5%	200x112.5	10x5.6

1X and 20x are defined as the normalized magnification, which is only used to represent the relative relationship between the lowest and highest magnification. Here, the normalized equations are $1x = 0.028/0.028$; $20x = 0.56/0.028$;

BMM-4K8MPA Light Module



BRL-8A LED Ring Light

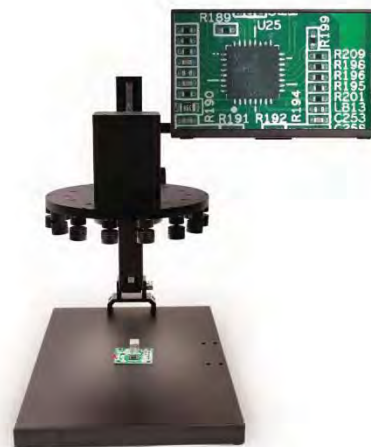
Order Code	LED	Power	Inner Dia.(mm)	Out Dia.(mm)
BRL-8A	8 CREE xpes	3V/3A	50	76

BRL: BestScope LED ring light with adjustable brightness;

BMM-4K can use BRL-12A as external light for the large FOV illumination




BRL-12A LED light



BS-210A(bracket)+BMM-4K8MPA(with BRL-12A)+4K Monitor

Specification of BMM-4K8MPA

Interface & Button Functions	
	USB Mouse USB mouse for XFCAMView control
	USB2.0 Connect USB flash drive to save pictures and videos Connect 5G WLAN module to transfer video wirelessly in real time with ImageView/ ImageLite
	HDMI Comply with HDMI1.4 standard. 4K/1080P format video output and supporting automatic switch between 4K and 1080P format according to the connected monitors
	USB Video Connect PC or other host device to realize video image transmission with ImageView/ ImageLite
	LAN LAN port to connect router and switch to transfer video with ImageView/ ImageLite
	ON/OFF Power on/off switch
	LED Power LED indicator
	SD Comply with SDIO3.0 standard and SD card could be inserted for video and images saving
	DC12V3A DC12V3A power input
XFCAMView Software Functions	
UI Operation	With USB mouse to operate on the embedded XFCAMView
Image Capture	8M (3840*2160) JPEG/TIFF image in SD card or USB flash drive
Video Record	Video format: 8M(3840*2160) H264/H265 encoded MP4 file Video saving frame rate:30fps
Camera Control Panel	Including Exposure , Gain , White Balance , Sharpness , Denoise , Denoise , Saturation , Gamma , Contrast , Brightness , Power Frequency control
Measurement Toolbar	Including Calibration , Measurement , and measurement parameter Export functions
Synthesis Control Toolbar	Including software Zoom , Flip , Freeze , Crosshair , LED Control , Auto-focus , Comparison , Browser , Setting , Version Check function
Auto Focus Control Panel	Including Zoom , Auto Focus , One Push , Manual Focus , Reset , and other functions
Software ImageView Environment under LAN/WLAN/USB Video Output	
White Balance	Auto White Balance
Color Technique	Ultra-Fine Color Engine
Capture/Control SDK	Windows/Linux/macOS/Android Multiple Platform SDK(Native C/C++, C#/VB.NET, Python, Java, DirectShow, Twain, etc)
Recording System	Still Picture or Movie
Operating System	Microsoft® Windows® XP / Vista / 7 / 8 / 8.1 /10(32 & 64 bit)/ View OSx(Mac OS X)/ Lite

	Linux/ Lite
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory: 4GB or More
	Ethernet Port: RJ45 Ethernet Port
	Display:19" or Larger
	CD-ROM
Operating Environment	
Operating Temperature (in Centidegree)	-10~ 50
Storage Temperature (in Centidegree)	-20~ 60
Operating Humidity	30~80%RH
Storage Humidity	10~60%RH
Dimension	
Length x Width x Height	80mm x 80mm x 80mm
Shipping Weight	0.75kg

Dimension



Dimension of BMM-4K8MPA

Packing Information

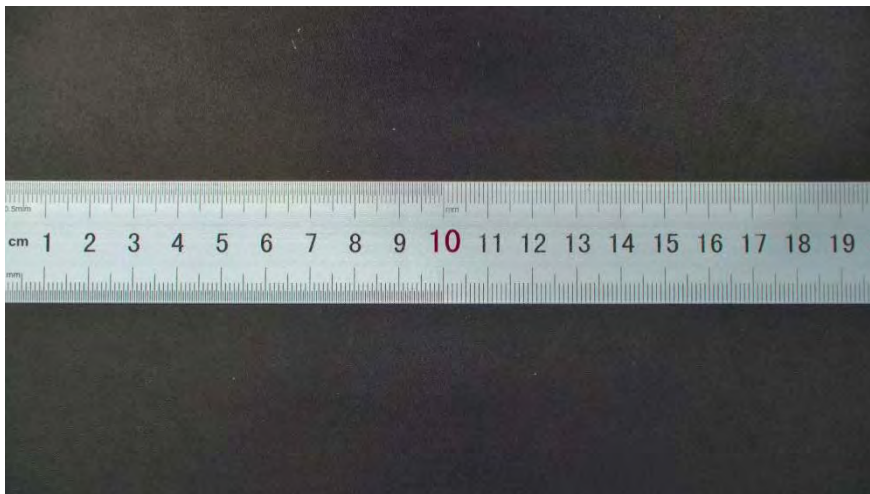


Packing information of BMM-4K8MPA

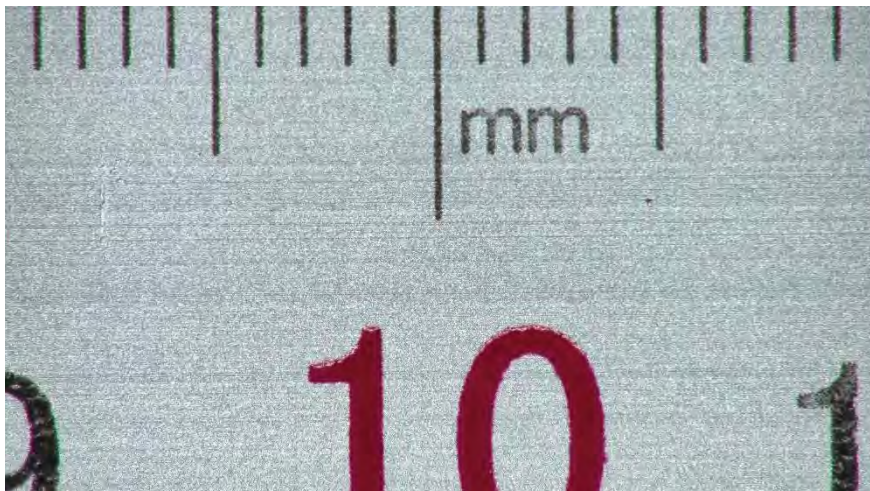
Standard Packing List		
A	Gift box: L:220cm W:220cm H:110cm (1pcs, 2.0kg/box)	
B	BMM-4K8MPA	
C	Power Adapter: Input: AC 100~240V 50Hz/60Hz, Output: DC 12V 3A	American Standard: Model: HKA03612030-7K: UL/CE/FCC(With American Standard AC Power Cable) European Standard: Model: HKA03612030-7K: UL/CE/FCC(With European Standard AC Power Cable) EMI Standard: FCC Part 15 Subpart B EMS Standard: EN61000-4-2,3,4,5,6
D	USB Mouse	
E	HDMI Cable	
F	USB2.0 A male to A male gold-plated connectors cable /2.0m	
G	CD (Driver & utilities software, Ø12cm)	
Optional Accessory		
H	Ethernet cable	
I	LED Ring Light(BRL-8A)	
J	USB flash drive	

K	USB WLAN adapter	
L	SD card(16G)	
M	Calibration kit	106011/TS-M1(X=0.01mm/100Div.); 106012/TS-M2(X,Y=0.01mm/100Div.); 106013/TS-M7(X=0.01mm/100Div., 0.10mm/100Div.)

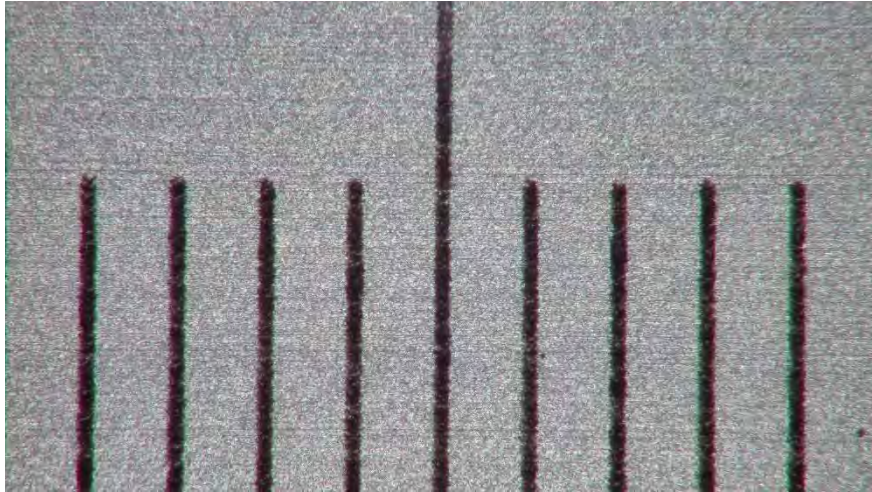
Sample Images



Ruler Captured with BMM-4K8MPA at 1X



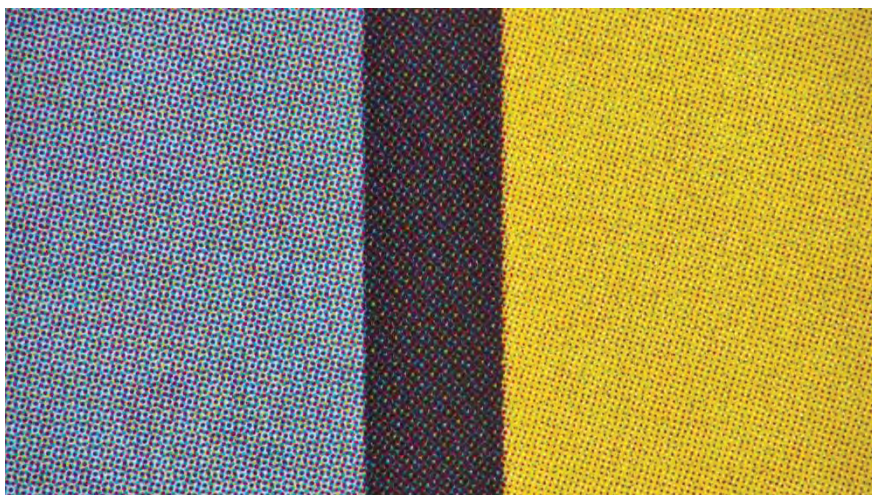
Ruler Captured with BMM-4K8MPA at 10X



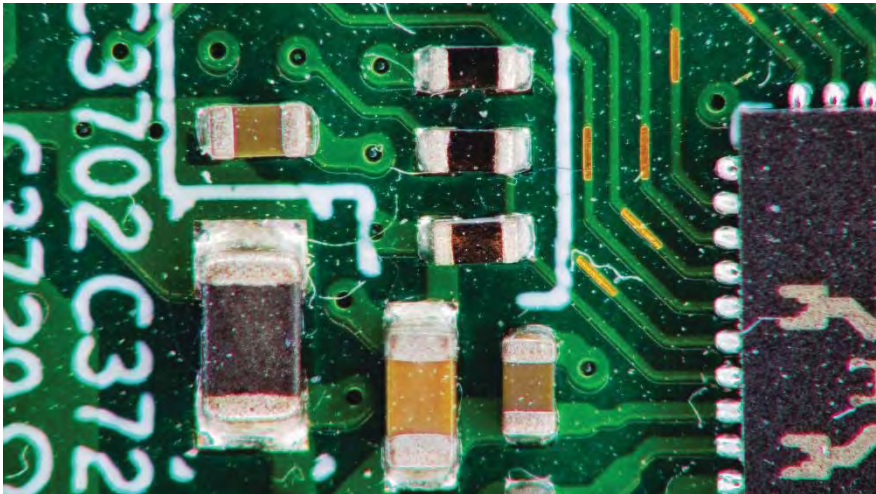
Ruler Captured with BMM-4K8MPA at 20X



Print Captured with BMM-4K8MPA at 1.0X



Print Captured with BMM-4K8MPA at 10X



PCB Captured with BMM-4K8MPA at 20X

3. BMM-4K8MPB Autofocus Digital Macro Microscope



Introduction

BMM is a series of electric controlled continuous zoom and autofocus all-in-one digital microscope with a large field of view. It is integrated with HDMI camera, Electric Controlled Continuous Zoom Auto-focus Objective and LED Integrated Illumination Light. BMM is the abbreviation of BestScope Macro Microscope. Different products in the BMM series can be formed with different part to satisfy the applicatuon requirement.

BMM can be assembled with various brackets or arms and offer a continuous zooming ratio with different lens. BMM also supports autofocus mode and manual focus mode.

BMM comes with a high-performance SONY CMOS sensor. It also has an embedded ARM core, allowing the camera to be connected directly to the HDMI monitor. The camera has XFCAMView software built within it, including Camera Control Panel, Auto Focus Control Panel, Measurement Toolbar, and Synthesis Camera Control Toolbar. Users can directly control the camera and perform various operations through a USB mouse. The images and videos captured by BMM can be saved on an SD card for on-site analysis and follow-up research.

BMM can be widely used in industrial inspection, medical observation, teaching and scientific research, automation system, and other fields.

BMM-4K8MPB supports HDMI/USB/LAN/WiFi control and video output (ImageView). The frame rate of the output is 4K/30FPS, and the zoom range is 1X~18X. It also supports electric zoom and auto focusing.



BMM-4K8MPB's front and back view



BMM-4K8MPB's side and front (with LED light) view

Feature

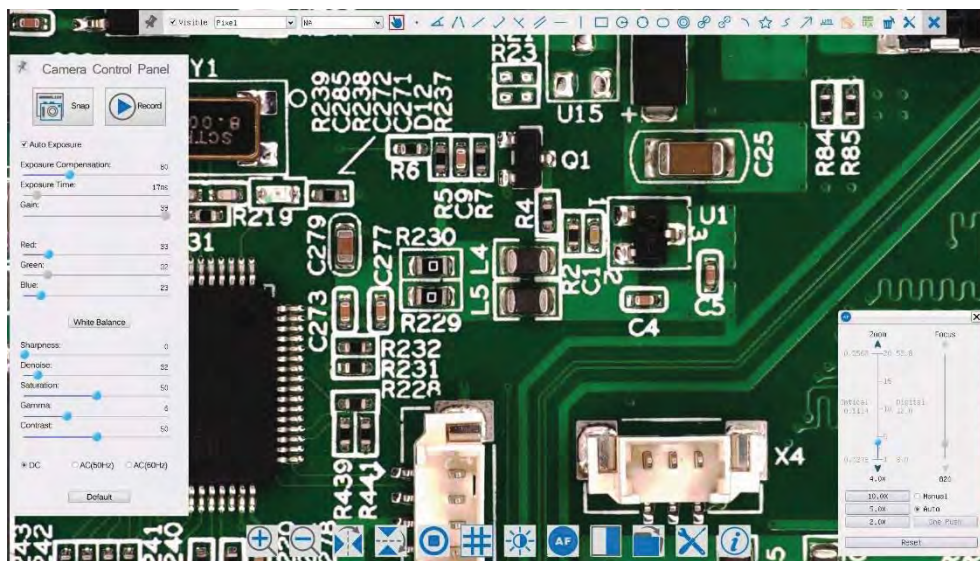
The **BMM-4K8MPB** comes with **BMM-4K8MPB HDMI** camera, **BMM-18X** lens and **BRL-8A** light source(**Optional**);

The Basic Characteristic of BMM-4K8MPB:

1. 5 groups 16 elements lens with 0.0218~0.392X, 18X zoom ratio, supports auto and manual focus;
2. 250mm standard working distance with 205~255mm depth of field;
3. At standard working distance, the large field of view 255mm*145mm at low magnification, helping users to quickly locate the target object, the small field of view 14.2mm*8mm at higher magnification, helping users to observe microscopically;
4. Sony 1/2.8" 4K Starvis CMOS with high signal-to-noise ratio;
5. 4K HDMI/USB/ETH/WiFi multiple video outputs;
6. 4K/1080P auto switching according to monitor resolution;
7. SD card/USB flash drive for captured image and video storage, support local preview and playback;
8. Built-in mouse control software XFCAMView, all functions can be realized with USB mouse;
9. Embedded mouse Camera Control Panel, Measurement Toolbar, Synthesis Control Toolbar, AF Control Panel;
10. Multi-language support;
11. Head suction LED ring light, the brightness can be directly controlled by XFCAMView;
12. With the adapter bracket of 76mm diameter, a electric controlled continuous zoom BMM can be built.



BS-210A(bracket)+BMM-4K8MPB+1080P Monitor



Built-in XFCAMView software and Its Control UI

Specification

BMM-4K8MPB Camera Module Datasheet

Order Code	Sensor & Size(mm)	Pixel(μm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure (ms)
BMM- 4K8MPB	Sony IMX415LQR-C 1/2.8"(5.57x3.13)	1.45x1.45	300mv/0.13 with 1/30s	30@3840*2160(HDMI) 30@3840*2160(NETWORK) 30@3840*2160(USB)	1x1	0.04~1000

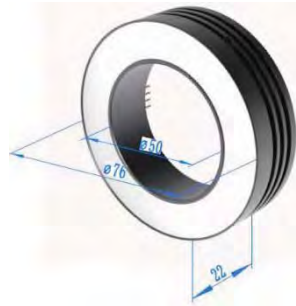
C: Color; M: Monochrome;

BMM-4K8MPB Lens Module Datasheet

Order Code	Working Distance(mm)	Zoom Range	MTF(lp/mm)	Distortion	FOV@1X(mm)	FOV@20X(mm)
BMM-18X	205~255	0.021X~0.39X	160	0.5%	255x145	14.2x8

1X and 18x are defined as the normalized magnification, which is only used to represent the relative relationship between the lowest and highest magnification. Here, the normalized equations are $1x = 0.021/0.021$; $18x = 0.39/0.021$;

BMM-4K8MPB Light Module



BRL-8A LED Ring Light

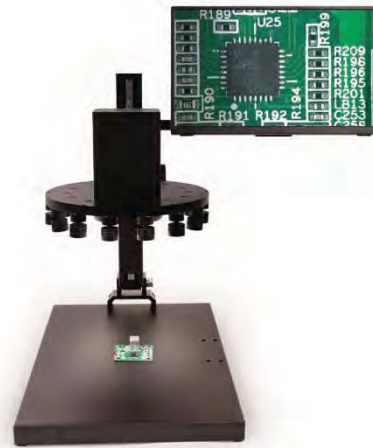
Order Code	LED	Power	Inner Dia.(mm)	Out Dia.(mm)
BRL-8A	8 CREE xpes	3V/3A	50	76

BRL: BestScope LED ring light with adjustable brightness;

BMM-4K can use BRL-12A as external light for the large FOV illumination




BRL-12A LED light



BS-210A(bracket)+BMM-4K8MPB (with BRL-12A)+4K Monitor

Specification of BMM-4K8MPB

Interface & Button Functions		
	USB Mouse	USB mouse for XFCAMView control
	USB2.0	Connect USB flash drive to save pictures and videos Connect 5G WLAN module to transfer video wirelessly in real time with ImageView/ImageLite
	HDMI	Comply with HDMI1.4 standard. 4K/1080P format video output and supporting automatic switch between 4K and 1080P format according to the connected monitors

	USB Video	Connect PC or other host device to realize video image transmission with ImageView/ImageLite
	LAN	LAN port to connect router and switch to transfer video with ImageView/ImageLite
	ON/OFF	Power on/off switch
	LED	Power LED indicator
	SD	Comply with SDIO3.0 standard and SD card could be inserted for video and images saving
	DC12V3A	DC12V3A power input
	XFCAMView Software Functions	
UI Operation	With USB mouse to operate on the embedded XFCAMView	
Image Capture	8M (3840*2160) JPEG/TIFF image in SD card or USB flash drive	
Video Record	Video format: 8M(3840*2160) H264/H265 encoded MP4 file Video saving frame rate:30fps	
Camera Control Panel	Including Exposure , Gain , White Balance , Sharpness , Denoise , Denoise , Saturation , Gamma , Contrast , Brightness , Power Frequency control	
Measurement Toolbar	Including Calibration , Measurement , and measurement parameter Export functions	
Synthesis Control Toolbar	Including software Zoom , Flip , Freeze , Crosshair , LED Control , Auto-focus , Comparison , Browser , Setting , Version Check function	
Auto Focus Control Panel	Including Zoom , Auto Focus , One Push , Manual Focus , Reset , and other functions	
Software View/Lite Environment under LAN/WLAN/USB Video Output		
White Balance	Auto White Balance	
Color Technique	Ultra-Fine Color Engine	
Capture/Control SDK	Windows/Linux/macOS/Android Multiple Platform SDK(Native C/C++, C#/VB.NET, Python, Java, DirectShow, Twain, etc.)	
Recording System	Still Picture or Movie	
Operating System	Microsoft® Windows® XP / Vista / 7 / 8 / 8.1 /10(32 & 64 bit)/ ImageView OSx(Mac OS X)/ ImageLite Linux/ ImageLite	
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher	
	Memory: 4GB or More	
	Ethernet Port: RJ45 Ethernet Port	
	Display:19" or Larger	
	CD-ROM	
Operating Environment		
Operating Temperature(in Centidegree)	-10~ 50	
Storage Temperature(in Centidegree)	-20~ 60	
Operating Humidity	30~80%RH	
Storage Humidity	10~60%RH	
Dimension		
Length x Width x Height	80mm x 80mm x 80mm	
Shipping Weight	0.75kg	

Dimension



Dimension of BMM-4K8MPB

Packing Information

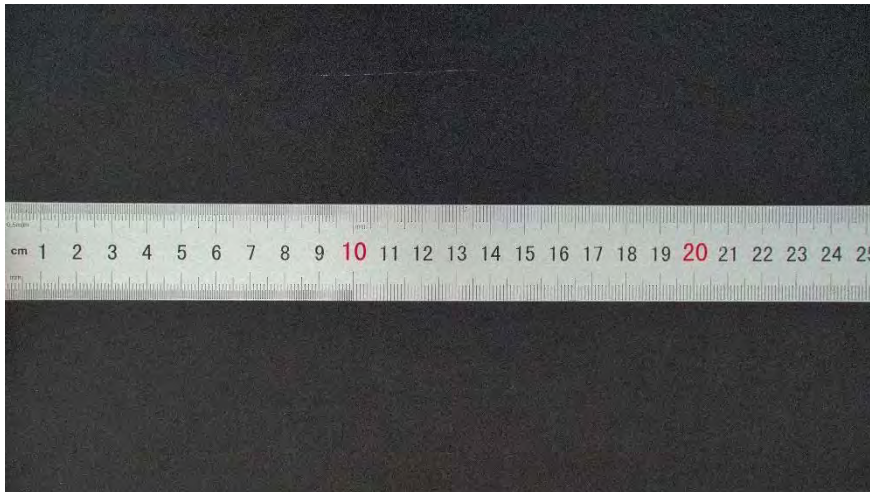


Packing information of BMM-4K8MPB

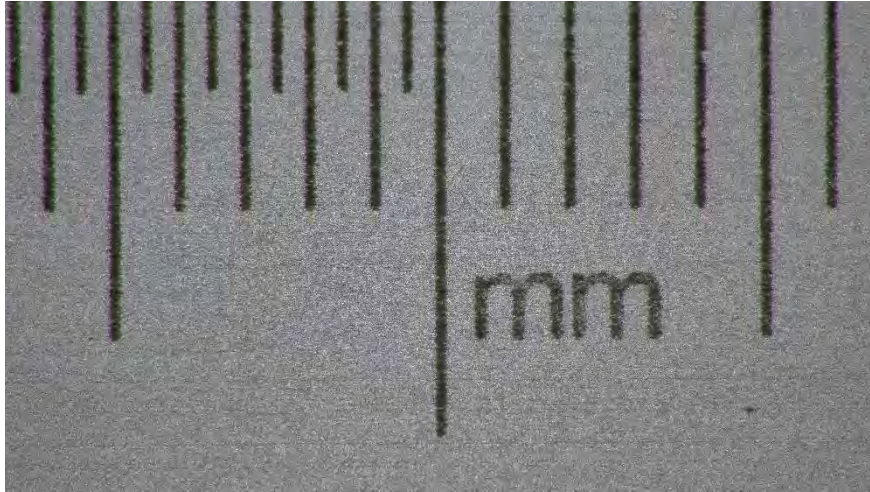
Standard Packing List		
A	Gift box: L:220cm W:220cm H:110cm (1pcs, 2.0kg/box)	
B	BMM-4K8MPB	
C	Power Adapter: Input: AC 100~240V 50Hz/60Hz, Output: DC 12V 3A	American Standard: Model: HKA03612030-7K: UL/CE/FCC(With American Standard AC Power Cable) European Standard: Model: HKA03612030-7K: UL/CE/FCC(With European Standard AC Power Cable) EMI Standard: FCC Part 15 Subpart B

		EMS Standard: EN61000-4-2,3,4,5,6
D	USB Mouse	
E	HDMI Cable	
F	USB2.0 A male to A male gold-plated connectors cable /2.0m	
G	CD (Driver & utilities software, Ø12cm)	
Optional Accessory		
H	Ethernet cable	
I	LED Ring Light(BRL-8A)	
J	USB flash drive	
K	USB WLAN adapter	
L	SD card(16G)	
M	Calibration kit	106011/TS-M1(X=0.01mm/100Div.); 106012/TS-M2(X,Y=0.01mm/100Div.); 106013/TS-M7(X=0.01mm/100Div., 0.10mm/100Div.)

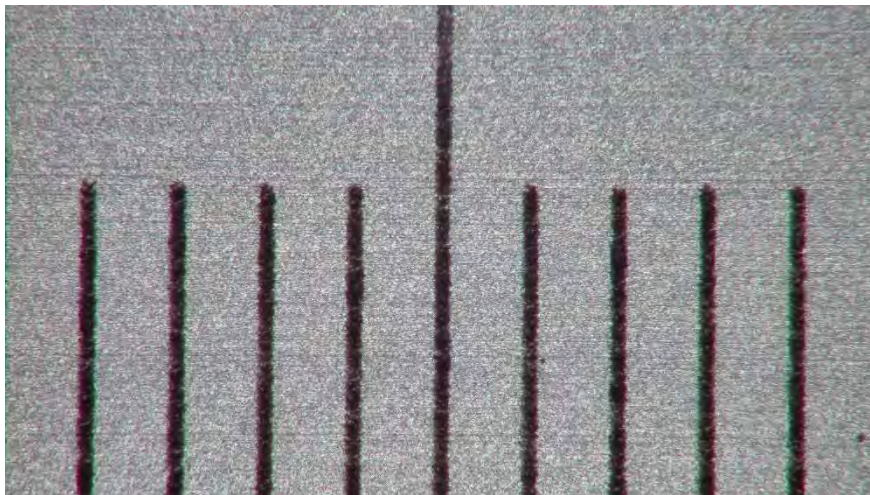
Sample Images



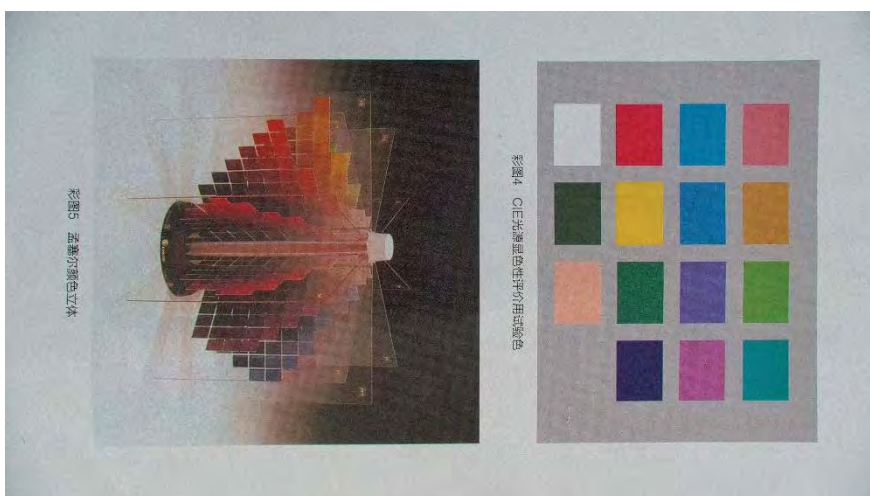
Ruler Captured with BMM-4K8MPB at 1X



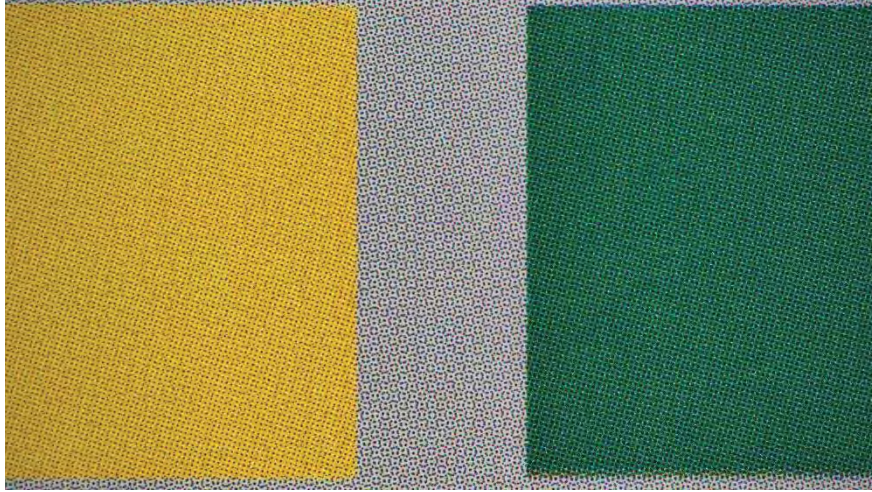
Ruler Captured with BMM-4K8MPB at 10X



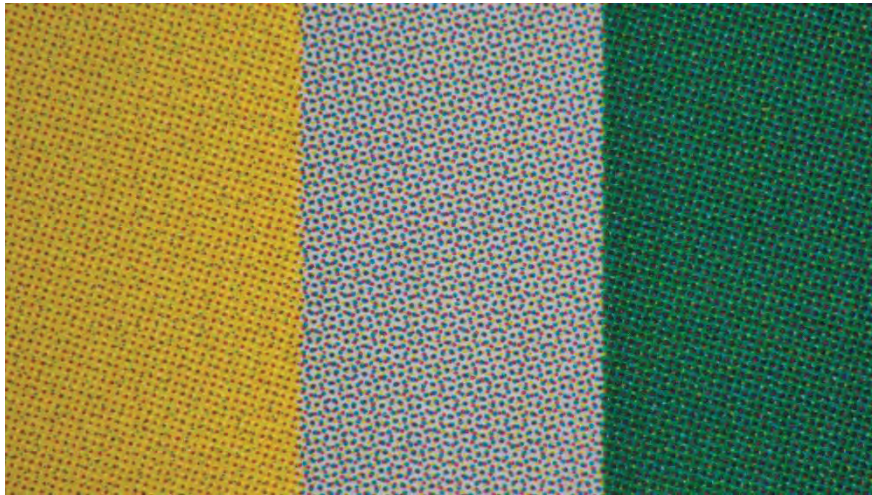
Ruler Captured with BMM-4K8MPB at 18X



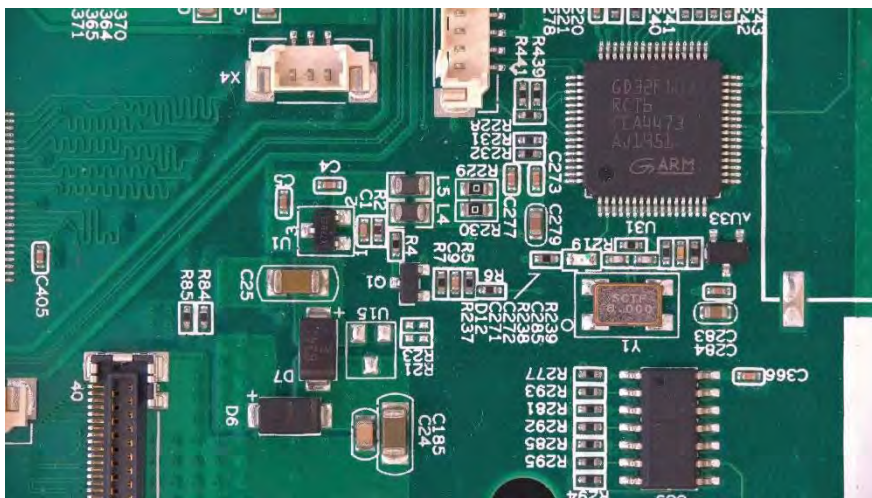
Print Captured with BMM-4K8MPB at 1.0X



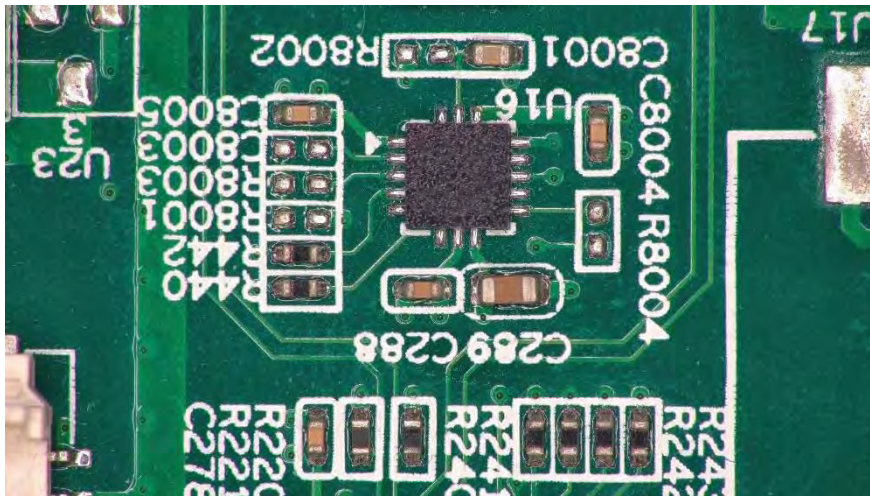
Print Captured with BMM-4K8MPB at 10X



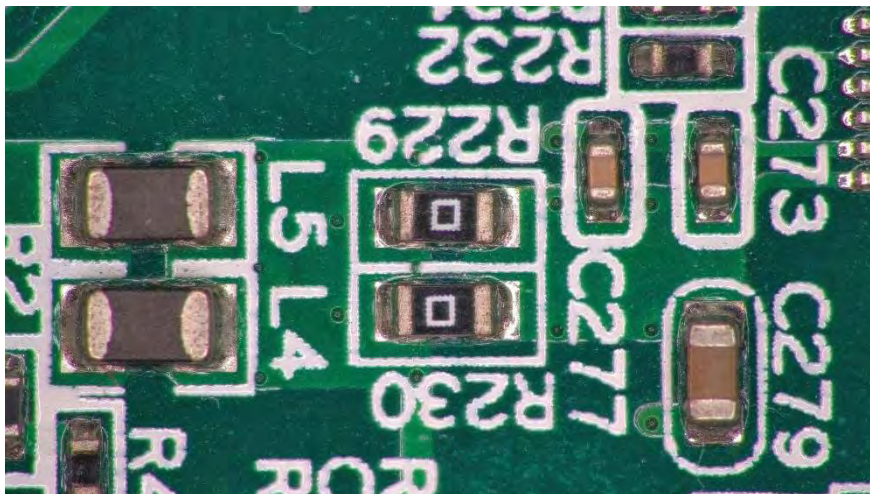
Print Captured with BMM-4K8MPB at 18X



PCB Captured with BMM-4K8MPB at 4.0X

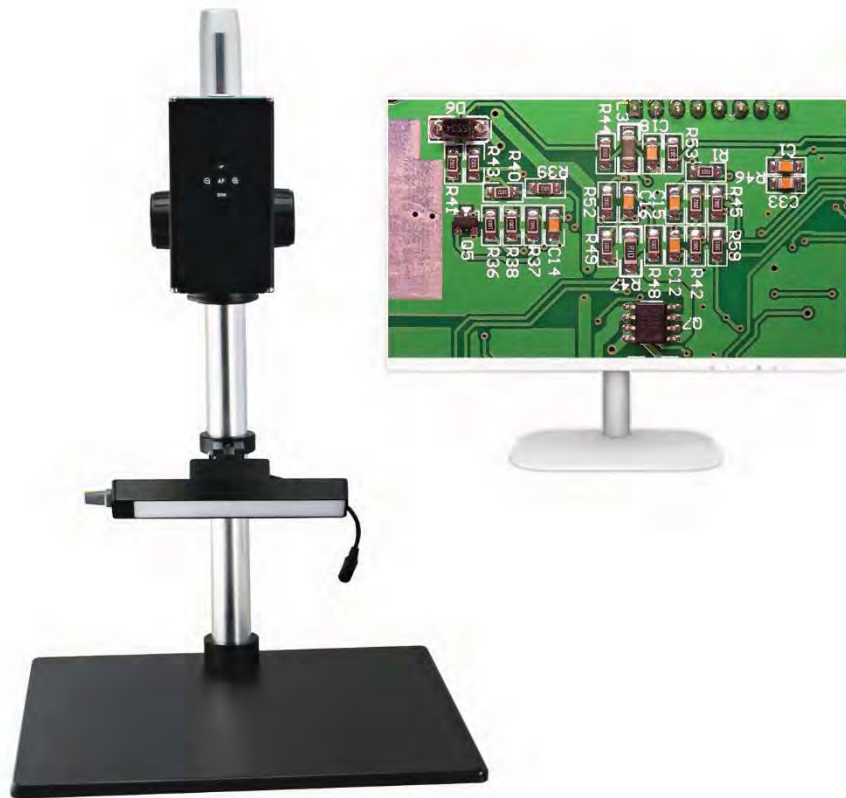


PCB Captured with BMM-4K8MPB at 10X



PCB Captured with BMM-4K8MPB at 18X

4. BMM2-1080A Large FOV Auto Focus Microscope



BMM2-1080A with monitor

Introduction

BMM2-1080A Large FOV Auto Focus Microscope adopt auto focus system, focusing accurately, quickly and smoothly. Integrated lens, operated with mouse and pictures can be save on USB disk in real time. A variety bracket and arms for option. This microscope is designed for the applications in the fields of machine vision, industrial inspection and scientific research.

Features

1. Auto focus function

The auto focus function realizes the variability of working distance, focusing accurately, quickly and conveniently. With built-in auto focus system, fast, accurate and smooth focusing can be achieved.

2. Built-in integrated lens

No additional lens. Built-in integrated lens with a variety of bracket or arm, more flexible application.

3. USB disk storage function

BMM2-1080A can take photos of the samples and save it on a USB disk in real time.

4. Mouse operation

Mouse operation is convenient and quick.

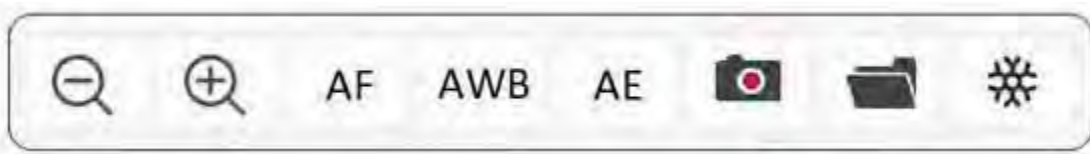
Product Details








Main Function


Shortcut function key





 Multiple increase shortcut key


 Multiple decrease shortcut key


 Auto focus shortcut key

 Auto white balance shortcut key

 Auto exposure shortcut key

 Photo trigger shortcut key

 Photo browsing shortcut key

 Image freezing shortcut key



Focusing control:

- One key focusing mode
- Auto focusing mode
- Manual focusing mode

Application

BMM2-1080A Large FOV Auto Focus Microscope is widely used in educational demonstration, agriculture research, industrial material, semi-conductor, integrated circuit board inspection area and so on. Widely used in electric equipment, semi-conductor, LCD and LED, for digital image observation, inspection and measurement.

Specification

Item	Specification	BMM2-1080A
Lens Magnification	1X-14X	●
Built-in Camera	1/2.5", resolution :1920*1080, pixel size: 3.24μm, frame rate: 60fps, HDMI output	●
Focusing	Auto Focus	●
Ring Light	BAL-80A LED Ring light, brightness adjustable	○
	BAL-52AP LED polarizing ring light, brightness adjustable	○
	BAL-52ASL LED side ring light, brightness adjustable	○
	BAL-228A Four-zone lighting control separately large area LED ring light	○
	BAL-228AG LED four-zone ring light with frosted glass	○
	BAL-16P LED polarizing ring light, brightness adjustable	○
	BAL-52A LED Ring light, brightness adjustable	○
Back Light	BTL-60A LED back light	○
Point Light	BPL-3A LED point light, 3W, brightness adjustable.	○
	BPL-3MC LED multi color point light, 3W, white, purple, blue, yellow, red, green and mixed light, brightness adjustable	○
	BPL-4A LED point light with numerically adjustable light adapter, 4W, brightness adjustable	○
Bar Light	BBL-5A bar LED illuminator, 60 LED, 12V/5W	●
Cold Light Source	BSL-3B LED light source with dual goose neck light guide, 6.5W	○
	BSL-15A-2 Cold LED light source with Dual Light Guide, 15W LED lamp	○
	BSL2-150A-2 Cold light source with Dual Light Guide, 21V/150W Halogen lamp	○
Stage	BMS-302 X-Y moving stage	○
	BMS-303 X-Y moving stage	○
	BMS-311 X-Y measuring stage	○
	BMS-316A X-Y measuring stage	○
	BMS-316B X-Y measuring stage	○
	BMS-400A large working stage	○
	BMS-260A XY working stage	○

Stand and Focus Arm	Round type column plain stand with coarse focus arm. Height: 518mm.	●
	BA1 Round type column plain stand with coarse focus arm. Stroke: 50mm.	○
	BA2 Round type column plain stand with coarse focus arm, transmitted 12V/5W LED illumination, brightness adjustable. Stroke: 50mm.	○
	BA3 Round type column plain stand with coarse and fine focus arm. Stroke: 67mm, fine precision: 0.002mm.	○
	BA4 Round type column plain stand with coarse and fine focus arm, transmitted 12V/5W LED illumination, brightness adjustable. Stroke: 67mm, fine precision: 0.002mm.	○
	BA5 Square type column plain stand with coarse focus arm. Stroke: 150mm.	○
	BA6 Square type column plain stand with coarse focus arm, transmitted 12V/5W LED illumination, brightness adjustable. Stroke: 150mm.	○
	BA7 Square type column plain stand with coarse and fine focus arm. Stroke: 260mm, fine precision: 0.002mm.	○
	BA8 Square type column plain stand with coarse and fine focus arm, transmitted 12V/5W LED illumination, brightness adjustable. Stroke: 260mm, fine precision: 0.002mm.	○
	BA9 multi-angle column plain stand with coarse focus arm. Stroke: 60mm.	○
	BA10 multi-angle column plain stand with coarse and fine focus arm. Stroke: 60mm, fine precision: 0.002mm.	○
	BA11 universal boom stand with coarse focus arm. Column height: 320mm, horizontal column length: 340mm, Φ 32mm, 360° rotatable. Base size: 330mm*300mm. Stroke: 50mm.	○
	BA12 universal boom stand with coarse and fine focus arm. Column height: 320mm, horizontal column length: 340mm, Φ 32mm, 360° rotatable. Base size: 330mm*300mm. Stroke: 65mm, fine precision: 0.002mm.	○
	BA13 Round type column large plain stand with coarse focus arm. Column height: 320mm, Φ 25mm, stroke: 50mm, base size: 380mm*260mm. Gross weight: 1.5kg.	○
	BFA-1 coarse focus arm. Stroke: 50mm.	○
	BFA-2 coarse and fine focus arm. Stroke: 65mm, fine precision: 0.002mm.	○
	BFA-3 multi-angle coarse focus arm, angle adjustable. Stroke: 50mm.	○
	BFA-4 multi-angle coarse and fine focus arm, angle adjustable. Stroke: 60mm, fine precision: 0.002mm.	○
	BFA-5 electric coarse and fine focus arm, supporting manual focusing and electric focusing. It has 5 preset positions, paired with 5 different magnification objectives. Stroke: 65mm, fine precision: 0.005mm.	○
	BFA-6 N interface coarse focus arm. Stroke: 50mm.	○
BFA-7 N interface coarse and fine focus arm. Stroke: 65mm, fine precision: 0.002mm.	○	

Note: ●Standard Outfit, ○Optional

Optical Parameter

Model	BMM2-1080A
Resolution	1920*1080
Pixel Size	3.24μm
Optical Size	1/2.5"
Color Depth	12:12:12 RGB
Frame Rate	60 fps
Color Adjustment	Manual / Auto
Luminance Adjustment	Manual / Auto
Storage function	Take photo saved with BMP /JPG format, supporting online preview
Lens Magnification	1X-14X
Working distance	100mm-∞
Power Input	DC 12V, 2A
Work Moisture	5%-85%
Work Temperature	0-60°C
Display Interface	HDMI Output
Stand	330*300mm base size, height: 518mm, coarse focus

Optical Magnification	FOV (100mm working distance)	FOV (300mm working distance)
1X	172mm*92mm	460mm*240mm
2X	96mm*50mm	230mm*130mm
5X	53mm*29mm	116mm*60mm
8X	40mm*22mm	74mm*40mm
10X	34mm*19mm	62mm*34m
14X	24mm*14mm	47mm*26mm

5. BMM2-4K8MPA Large FOV Auto Focus 4K Microscope



BMM2-4K8MPA with monitor

Introduction

BMM2-4K8MPA Large FOV Auto Focus 4K Microscope adopts auto focus system, supporting both auto and manual focus. The users can customize the focusing area. This microscope is designed for the applications in the fields of machine vision, industrial inspection and scientific research.

Features

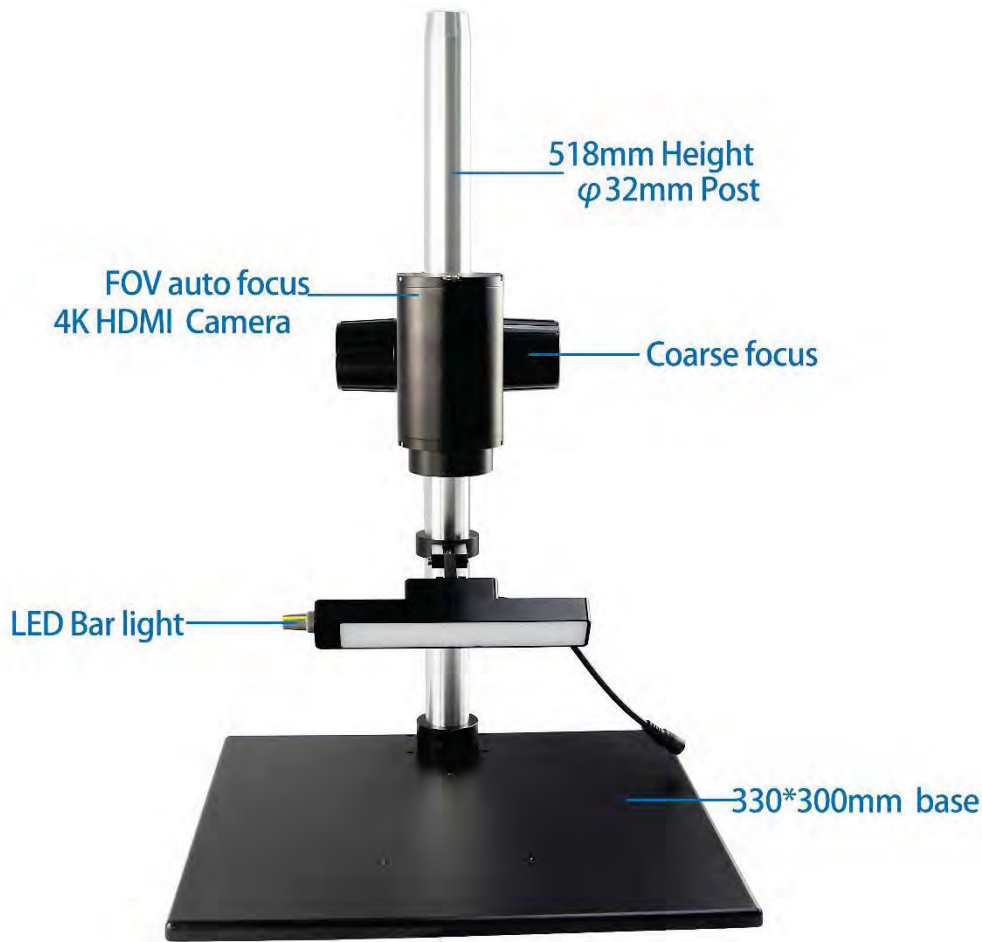
1. Auto focus function

1-14X zoom high-speed automatic focusing lens with both auto and manual focus. The users can customize the focusing area. The images can adapt to screen size, displaying the current magnification

2. High definition

High-definition images shooting and echo. Low noise, high sensitivity and realistic colors. Two USB 2.0 interface for external USB disk for storage and mouse for operation.

Product Details



Application

BMM2-4K8MPA Large FOV Auto Focus 4K Microscope is widely used in educational demonstration, agriculture research, industrial material, semi-conductor, integrated circuit board inspection area and so on. Widely used in electric equipment, semi-conductor, LCD and LED, for digital image observation, inspection and measurement.

Specification

Item	Specification	BMM2-4K8MPA
Lens Magnification	1X-14X	●
Built-in Camera	1/2.8", 8 mega-pixels (SONY), resolution :3840*2160, pixel size: 1.45μm*1.45μm, frame rate: 30fps, HDMI output, with two USB2.0 for USB disk and mouse	●
Focusing	Auto focus and manual focus	●
Ring Light	BAL-80A LED Ring light, brightness adjustable	○
	BAL-52AP LED polarizing ring light, brightness adjustable	○
	BAL-52ASL LED side ring light, brightness adjustable	○
	BAL-228A Four-zone lighting control separately area LED ring light	○
	BAL-228AG LED four-zone ring light with frosted glass	○

	BAL-16P LED polarizing ring light, brightness adjustable	○
	BAL-52A LED Ring light, brightness adjustable	○
Back Light	BTL-60A LED back light	○
Point Light	BPL-3A LED point light, 3W, brightness adjustable.	○
	BPL-3MC LED multi color point light, 3W, white, purple, blue, yellow, red, green and mixed light, brightness adjustable	○
	BPL-4A LED point light with numerically adjustable light adapter, 4W, brightness adjustable	○
Bar Light	BBL-5A bar LED illuminator, 60 LED, 12V/5W	●
Cold Light Source	BSL-3B LED light source with dual goose neck light guide, 6.5W	○
	BSL-15A-2 Cold LED light source with Dual Light Guide, 15W LED lamp	○
	BSL2-150A-2 Cold light source with Dual Light Guide, 21V/150W Halogen lamp	○
Stage	BMS-302 X-Y moving stage	○
	BMS-303 X-Y moving stage	○
	BMS-311 X-Y measuring stage	○
	BMS-316A X-Y measuring stage	○
	BMS-316B X-Y measuring stage	○
	BMS-400A large working stage	○
	BMS-260A XY working stage	○
Stand and Focus Arm	Round type column plain stand with coarse focus arm. Height: 518mm.	●
	BA1 Round type column plain stand with coarse focus arm. Stroke: 50mm.	○
	BA2 Round type column plain stand with coarse focus arm, transmitted 12V/5W LED illumination, brightness adjustable. Stroke: 50mm.	○
	BA3 Round type column plain stand with coarse and fine focus arm. Stroke: 67mm, fine precision: 0.002mm.	○
	BA4 Round type column plain stand with coarse and fine focus arm, transmitted 12V/5W LED illumination, brightness adjustable. Stroke: 67mm, fine precision: 0.002mm.	○
	BA5 Square type column plain stand with coarse focus arm. Stroke: 150mm.	○
	BA6 Square type column plain stand with coarse focus arm, transmitted 12V/5W LED illumination, brightness adjustable. Stroke: 150mm.	○
	BA7 Square type column plain stand with coarse and fine focus arm. Stroke: 260mm, fine precision: 0.002mm.	○
	BA8 Square type column plain stand with coarse and fine focus arm, transmitted 12V/5W LED illumination, brightness adjustable. Stroke: 260mm, fine precision: 0.002mm.	○
	BA9 multi-angle column plain stand with coarse focus arm. Stroke: 60mm.	○
	BA10 multi-angle column plain stand with coarse and fine focus arm. Stroke: 60mm, fine precision: 0.002mm.	○
	BA11 universal boom stand with coarse focus arm. Column height: 320mm, horizontal column length: 340mm, Φ 32mm, 360° rotatable. Base size: 330mm*300mm. Stroke: 50mm.	○
BA12 universal boom stand with coarse and fine focus arm. Column height: 320mm,	○	

	horizontal column length: 340mm, Φ 32mm, 360° rotatable. Base size: 330mm*300mm. Stroke: 65mm, fine precision: 0.002mm.	
	BA13 Round type column large plain stand with coarse focus arm. Column height: 320mm, Φ 25mm, stroke: 50mm, base size: 380mm*260mm. Gross weight: 1.5kg.	○
	BFA-1 coarse focus arm. Stroke: 50mm.	○
	BFA-2 coarse and fine focus arm. Stroke: 65mm, fine precision: 0.002mm.	○
	BFA-3 multi-angle coarse focus arm, angle adjustable. Stroke: 50mm.	○
	BFA-4 multi-angle coarse and fine focus arm, angle adjustable. Stroke: 60mm, fine precision: 0.002mm.	○
	BFA-5 electric coarse and fine focus arm, supporting manual focusing and electric focusing. It has 5 preset positions, paired with 5 different magnification objectives. Stroke: 65mm, fine precision: 0.005mm.	○
	BFA-6 N interface coarse focus arm. Stroke: 50mm.	○
	BFA-7 N interface coarse and fine focus arm. Stroke: 65mm, fine precision: 0.002mm.	○

Note: ●Standard Outfit, ○Optional

Optical Parameter

Model	BMM2-4K8MPA
Optical Magnification	1X-14X
Resolution	3840*2160
Pixel Size	1.45 μ m*1.45 μ m
Pixel	8 mega-pixels (SONY)
Target Size	1/2.8"
Data bit	12bit
Exposure mode	Line-by-line exposure
Output color	Colorful
Output frame	30fps
Output	HDMI
Processor	Dual-core CPU processor
Storage	USB disk
External interface	HDMI*1, USB2.0*2
Stand	330*300mm base size, height: 518mm, coarse focus

Magnification	FOV (working distance: 100mm)	FOV (working distance: 300mm)
1X	171mm*92mm	420mm*230mm
2X	89mm*50mm	196mm*110mm
3X	71mm*40mm	150mm*84mm
4X	60mm*33mm	116mm*65mm
5X	52mm*29mm	101mm*57mm
14X	24.3mm*13.5mm	45.5mm*25mm

6. BMM3-1080A/B, BMM3-AF1080A/B Series All-in-One Microscope



BMM3-1080A/B



BMM3-AF1080A/B

Introduction

BMM3-1080A/B and BMM3-AF1080A/B Series All-in-One Microscope adopt digital four-zone illumination, providing high resolution images. Motorized zoom, zoom range 0.7X-4.8X.

Feature

1. Motorized zoom

Motorized optical zoom: 0.7-4.8X. The zoom can be switched freely within 2 seconds, with more precise magnification control. With a unique algorithm, measurement can be done without calibration after optical zoom.

2. Four-zone illumination

Four-zone ring light can be adjusted separately or as a whole to make the illumination more reasonable and avoid overexposure or dimness. For surfaces with high reflective curvature, adjusting the lighting of the 4-section lights can avoid high reflection and achieve a polarizing effect.

3. Rich accessories

The product comes standard with a 1.0X objective lens. To meet the observation needs of different products, 0.5X, 0.7X, 2.0X, and 3D objectives can also be selected. For customers with limited space or pursuing overall aesthetics, an all-in-one display screen can be selected. For customers who require external triggering for camera focusing, an IO trigger cable can be selected to facilitate the camera's integration into the automation system.

4. Shortcut key operation

For commonly used functions such as zoom, focus, and illumination, mouse shortcut keys are set. In blank space, the mouse wheel scrolls - Zoom in/out. Right mouse button with scroll wheel - adjust the brightness of the light

under the existing settings. Left mouse button with scroll wheel - adjust the focus position based on the current position.

5. Professional factory debugging

Each device undergoes professional personnel debugging before leaving the factory to ensure that all optical performance parameters are adjusted to the optimal state.

Specification

Order Code	Focusing	Sensor Size	Pixel (µm)	Shutter	Resolution	Frame Rate	Power Supply	Output Interface	Storage
BMM3-AF1080A	Auto	1/2"	3.75	Rolling	1920*1080	60fps	DC 12V	HDMI/ LAN	USB disk
BMM3-AF1080B	Auto	1/2"	3.75	Rolling	1920*1080	60fps	DC 12V	HDMI/ USB	PC
BMM3-1080A	Fixed focus	1/2"	3.75	Rolling	1920*1080	60fps	DC 12V	HDMI/ LAN	USB disk
BMM3-1080B	Fixed focus	1/2"	3.75	Rolling	1920*1080	60fps	DC 12V	HDMI/ USB	PC

7. BMM4-AF1080A/B, BMM4-AF4K8MPA/B/C Large FOV Auto Focus

Microscope



BMM4-AF1080A/B & BMM4-AF4K8MPA/B/C

Introduction

BMM4-AF1080A/B and BMM4-AF4K8MPA/B/C Large FOV Auto Focus Microscope have long working distance and large field of view, providing high resolution images and videos with 4K HDMI/ LAN/ USB 3.0 multi-interface output.

Feature

1. Sony Exmor/ Starvis back illuminated CMOS sensor.
2. 4K HDMI/ LAN/ USB 3.0 multi-interface output.
3. 4K/ 1080P HDMI 60fps output adaptive switching.
4. Images and videos are saved to USB flash drive, supporting local preview and playback.
5. Embedded software is used to control the camera, with built-in functions such as measurement and image comparison.
6. The USB 3.0 output resolution of video supports maximum YUV 4K20fps.
7. Support multiple control interfaces such as hard trigger, mouse, foot pedal, keypad, keyboard, etc.

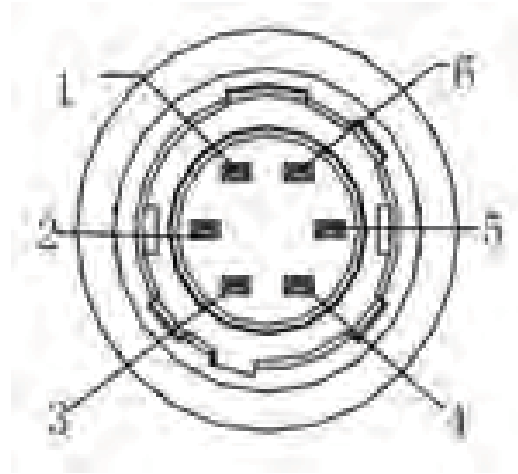
Specification

Order Code	Sensor Size	Pixel (μm)	Shutter	Resolution	Frame Rate	Output Interface	Storage
BMM4-AF1080A	1/2.8"	2.9	Rolling	1920*1080	HDMI: 1080P@60fps LAN: 1080P@60fps	HDMI/ LAN	USB disk /PC
BMM4-AF1080B	1/2.8"	2.9	Rolling	1920*1080	HDMI: 1080P@60fps USB:1080P@60fps LAN: 1080P@60fps	HDMI/ LAN/ USB	PC
BMM4-AF4K8MPA	1/2.8"	1.45	Rolling	3840*2160	HDMI: 4K@30fps/ 1080P@30fps LAN:4K@30fps/ 1080P@30fps	HDMI/ LAN	USB disk /PC
BMM4-AF4K8MPB	1/2.8"	1.45	Rolling	3840*2160	HDMI: 4K@60fps LAN: 4K@30fps/ 1080P@60fps	HDMI/ LAN	USB disk /PC / RAM
BMM4-AF4K8MPC	1/2.8"	1.45	Rolling	3840*2160	HDMI: 4K@60fps USB: 4K@20fps/ 1080P@60fps LAN: 4K@30fps/ 1080P@60fps	HDMI/ LAN/ USB	PC

Order Code	Focusing	Sensor Type	Power Supply	Working Distance	Zoom Ratio	Digital Magnification
BMM4-AF1080A	Auto	CMOS	DC 12V	10cm~∞	1:14	1-6
BMM4-AF1080B	Auto	CMOS	DC 12V	10cm~∞	1:14	1-6
BMM4-AF4K8MPA	Auto	CMOS	DC 12V	10cm~∞	1:28	1-3
BMM4-AF4K8MPB	Auto	CMOS	DC 12V	10cm~∞	1:28	1-3
BMM4-AF4K8MPC	Auto	CMOS	DC 12V	10cm~∞	1:28	1-3

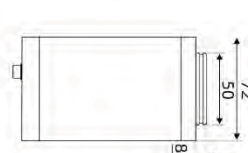
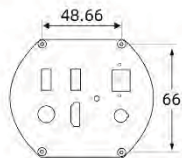
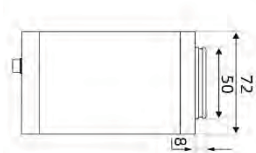
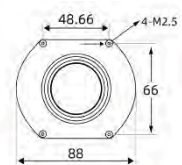
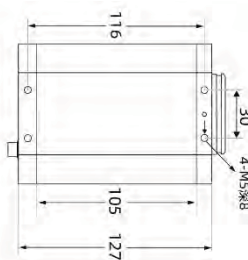
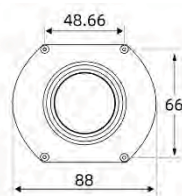
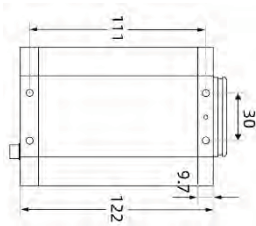
Optical Magnification	FOV (100mm working distance)	FOV (300mm working distance)
1X	171mm*92mm	420mm*230mm
2X	89mm*50mm	196mm*110mm
5X	71mm*40mm	150mm*84mm
8X	60mm*33mm	116mm*65mm
10X	52mm*29mm	101mm*57mm
14X	24.3mm*13.5mm	45.5mm*25mm
28X	12.15mm*6.75mm	22.75mm*13mm

Interface



Trigger Serial No.	Function Symbol	Function Definition	Description
1	12V	IN	+12V DC power supply
2	Opt-Iso In	IN	Optocoupler isolation signal input
3	GPIO	IN/OUT	Can be configured as input or output
4	Opt-Iso Out	OUT	Optocoupler isolation signal output
5	I/O Ground	In	Signal ground
6	Gnd	In	Power ground

Dimension



BMM4-AF1080A/B

BMM4-AF4K8MPA/B/C

Unit: mm