

The ZM0480WU1080PA All-in-one Zoom Monocular WiFi/USB2.0 Digital Microscope



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1 ZM0480WU1080PA All-in-one Zoom Monocular WiFi/USB2.0 Digital Microscope

1.1 The ZM0480WU1080PA's Basic Characteristic



Figure 1 The main body of ZM0480WU1080PA

ZM0480WU1080PA All-in-one Zoom Monocular WiFi/USB2.0 Digital Microscope is shown in Figure 1. It has 20x continuous zoom lens **TZM0480-W3100-TV3050**, 1080P CMOS sensor WiFi or USB2.0 camera **WU1080PA** and LED ring light source **TZM0756DRL-NPC**.

The **WU1080PA** module can directly complete the video and image acquisition with a computer, and the LED ring light source module is directly connected to the **WU1080PA** module through the main body of the optical continuous zoom lens with no need of the external power supply.

ZM0480WU1080PA meets the digital imaging observation, inspection and measurement in the fields of modern electronic equipment, semiconductor, laser, led, LCD, industrial on-line detection and biology.

1.2 The ZM0480WU1080PA's Main Zoom Body TZM0480-W3100-TV3050's Characteristics

Optical Parameters	
Zoom Lens	TZM0480-W3100-TV3050 zoom lens, 0.4X-8.0X zoom range
Working Distance	86mm-174mm (Determined by the auxiliary objective)
NA	0.01-0.12 (With W3100, 1x auxiliary objective)
Resolution	27.5um-2.3um (With W3100, 1x auxiliary objective)
Field	1.6mm-63.9mm
Optional Objective	0.50x, 0.75x, 1.00x (Optional)
Other Optional Objective	Infinite microscope objective (Both biological microscope objective and metallographic microscope objective can be used)
Dimensions	213mm x 52mm
Bracket Interface	Standard 50mm

1.3 The Optional Objective W3xxx for TZM0480-W3xxx-TV3050

Auxiliary Objective	Specification	TV Lens TV3050 for 1/2.8" Sensor	
		Low	High
W3100, 1.0X(86mm WD)	PMAG	0.20x-4.00x	
	FOV	31.95mm	1.60mm
	NA	0.010	0.112
W3050, 0.5X(174mm WD)	PMAG	0.10x-2.00x	
	FOV	63.90mm	3.20mm
	NA	0.005	0.056

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W3075, 0.75X(115mm WD)	PMAG	0.15x-3.00x	
	FOV	42.60mm	2.13mm
	NA	0.008	0.084
Remarks	When using coaxial lighting, low magnification may produce vignetting. When using infinity objectives as Auxiliary Lens Module (adapter available), the PMAG 、 FOV and NA of the TZM0480 depends on the parameters of the objectives.		

WD: Working Distance;

PMAG: Primary Magnification;

FOV: Field of View in the object side;

NA: Numerical Aperture;

1.4 The ZM0480WU1080PA's WiFi/USB2.0 Camera Module WU1080PA

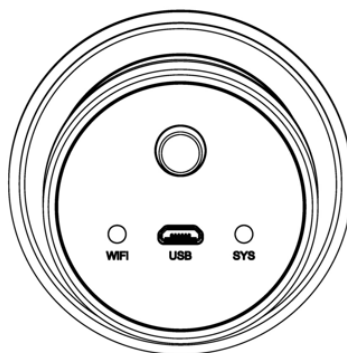


Figure 2 The top panel of ZM0480WU1080PA

Interface and Button	Function Description
LED	LED status indicator;
Micro USB	Connect Micro USB 5V power supply to power the camera, Camera provides WiFi AP connection mode; Connecting USB port of PC for video transfer;
Camera Hardware	Function Description
WU1080PA Camera	Attach to the ZM0480 main zoom body
Sensor	Sony IMX307(C), 2M,1/2.8"(5.57x3.13), pixel size 2.9um x 2.9um
G Sensitivity /Dark Signal/ Dynamic Range /SNR	1300mv with 1/30s
FPS/Resolution	50@1920*1080(USB), 50@1920*1080(WiFi)
Exposure	0.01~1000ms
Hardware Configurations	
USB Video Interface	Connecting USB port of PC for video transfer; MJPEG format video, supported 50fps@1080P;
WiFi Interface	Support 802.11b/g/n protocols in AP mode; 50fps@1920*1080 H264 encoded video and Jpeg image capture;
Color Technique	Ultra-Fine Color Engine;
ISP Function	Exposure(Automatic / Manual Exposure) , Gain, White Balance(Automatic / Manual / ROI Mode), Sharpening, 3D Denoise, Saturation Adjustment, Contrast Adjustment, Brightness Adjustment, Gamma Adjustment, Color to Gray, 50HZ/60HZ Anti-flicker Function, Anti-flicker, Mirror/Flip.
Capture/Control SDK	Windows/Linux/macOS/Android Multiple Platform SDK; DirectShow, Twain
Operating Environment	
Operating Temperature(in Centidegree)	-10~ 50
Storage Temperature(in Centidegree)	-20~ 60
Operating Humidity	30~80%RH
Storage Humidity	10~60%RH
Power Supply	USB DC 5V/1A Adapter
Software Environment	
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

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	WiFi Adaptor: Support 802.11 b/g/n
	Display:17" or Larger
	CD-ROM
Lighting Module	
LED Ring Light	LED direct ring light with adjustable brightness(No power cable) (TZM0756DRL-NPC)
LED Ring Polarization Light	LED direct ring polarization light with adjustable brightness(No power cable), (TZM0756DRPL-NPC)
Coaxial Light Module	LED Coaxial Light Module with adjustable brightness(No power cable), (TZM0756CL_NPC)
Power Supply	Integrated power supply, no power cable winding trouble, sample observation more freely
Installation Method	Express second-level suction type installation, convenient and simple
Brightness Control	Through the 3-way multi-function adjusting wheel or software GUI, both the hardware and software can adjust the light intensity synchronously with no hassle

2 The ZM0480WU1080PA All-in-one Zoom Monocular WiFi/USB2.0 Digital Microscope's Software and App

For Windows user (Windows XP (32bit), Windows 7/8/10 (32/64 bit)), please use [ToupView](#).

For macOS and Linux user (macOS 10.10 or above or Linux distributions with kernel 2.6.27 or higher), please use [ToupLite](#).

When connecting the camera with a mobile device, the free [ToupView App](#) is required. Just make sure that the mobile device uses iOS 11 or higher/Android 5.1 or higher operating systems.

The software or the [App](#) can be downloaded from the following link:

Windows: <https://www.touptekphotonics.com/download/>

Linux & macOS: <https://www.touptekphotonics.com/download/>

iOS: <https://itunes.apple.com/us/app/toupview/id911644970>

Android: <https://play.google.com/store/apps/details?id=com.touptek.tpview>

Note:The device must be WiFi enabled to support WiFi connection.

3 Connection of ZM0480WU1080PA

3.1 Connecting Camera to the PC with Micro USB Port

The steps to start the camera are listed below:

- Install the [ToupView /ToupLite](#) software on your PC;
- Connect the Micro USB cable to the power port, wait for the camera to start;
- Open [ToupView/ToupLite](#) software. The [ZM0480WU1080PA](#) camera will be recognized automatically by software. In [ToupView/ToupLite](#) software, select the corresponding [ZM0480WU1080PA](#) camera by clicking the camera name in the camera list.

3.2 Camera Working in WiFi AP Mode

The steps to start the camera are listed below:

- Install the [ToupView/ToupLite](#) on your PC or install the [ToupView App](#) on the mobile device;
- Connect the Micro USB cable to the power port;
- Connect the PC or mobile device to the camera;
- Start the [ToupView/ToupLite](#) software or [ToupView App](#) and check the configuration. Normally, active [ZM0480WU1080PA](#) cameras are automatically recognized. The connected cameras will be listed in the [Camera List](#) group of the [Camera Control Bar](#) of [ToupView/ToupLite](#) on PC. On mobile device, connected cameras will be listed in the [Camera Thumbnail](#) page of [ToupView App](#). Click the corresponding camera to start the stream.

Apart from the [ZM0480WU1080PA](#), you only need an USB2.0 cable.



Figure 3 ZM0480WU1080PA connected to computer

4 ZM0480WU1080PA's Packing Information



Figure 4 ZM0480WU1080PA 's packing Information

Standard Packing List	
A	Gift box: L:17.5cm W:17.5cm H:8.5cm (1pcs, 0.85kg/ box)
B	The ZM0480WU1080PA main body
C	LED Direct Ring Light with No Power Connection (TZM0756DRL-NPC)
D	Micro USB data cable 1.5m
E	Power Adapter: Input: AC 100~240V 50Hz/60Hz, Output: DC 5V 1A American standard: Model: POWER-U-5V1A(SK12G-0500100U); UL/CE/FCC European standard: Model: POWER-E-5V1A(SK12G-0500100V); UL/CE/FCC
F	CD (Driver & utilities software, Ø12cm)

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Optional Accessory	
G	The LED Direct Ring Polarization Light with No Power Connection (TZM0756DRPL-NPC)
H	Coaxial Light Module with No Power Connection (TZM0756CL-NPC)
I	The other Auxiliary Lens(Not shown)



Figure 5 LED Direct Ring Light ZM0756DRL-NPC



Figure 6 LED Direct Ring Polarization Light ZM0756DRPL-NPC



Figure 7 LED Coaxial Light ZM0756CL-NPC

5 Sample Photos Captured with ZM0480WU1080PA

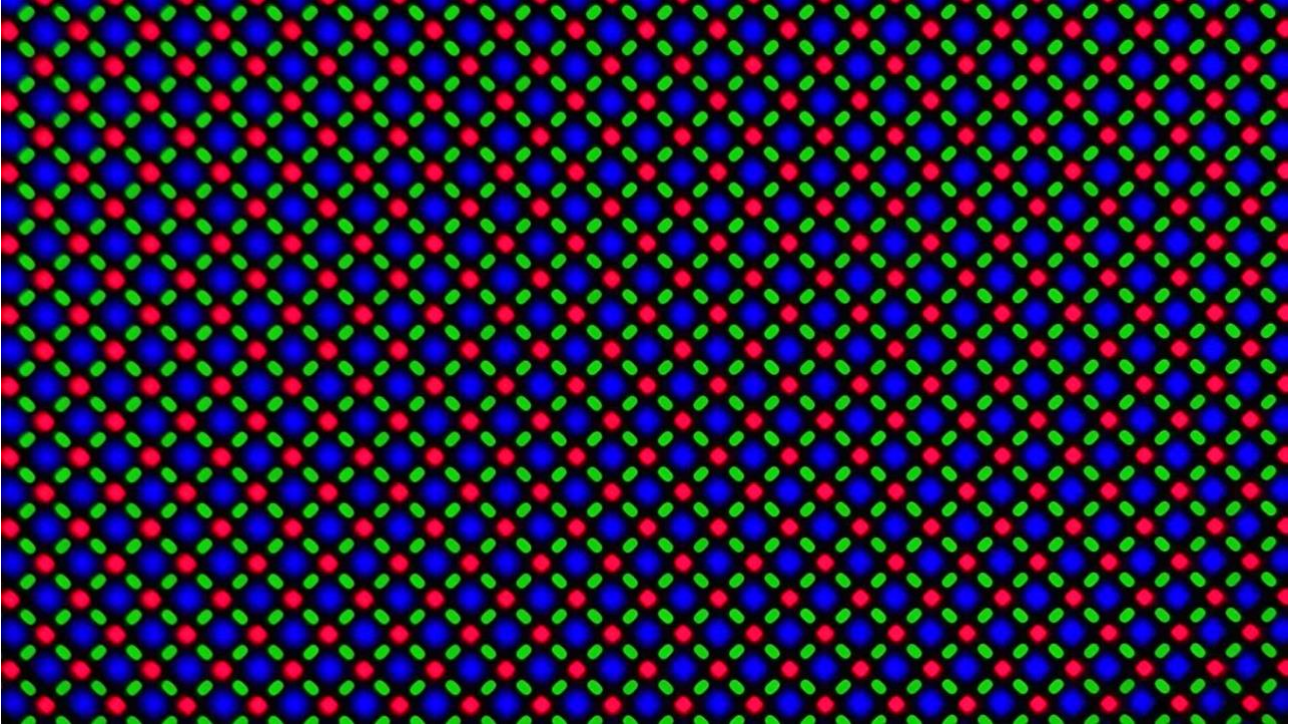


Figure 8 LCD pixel array captured with ZM0480WU1080PA

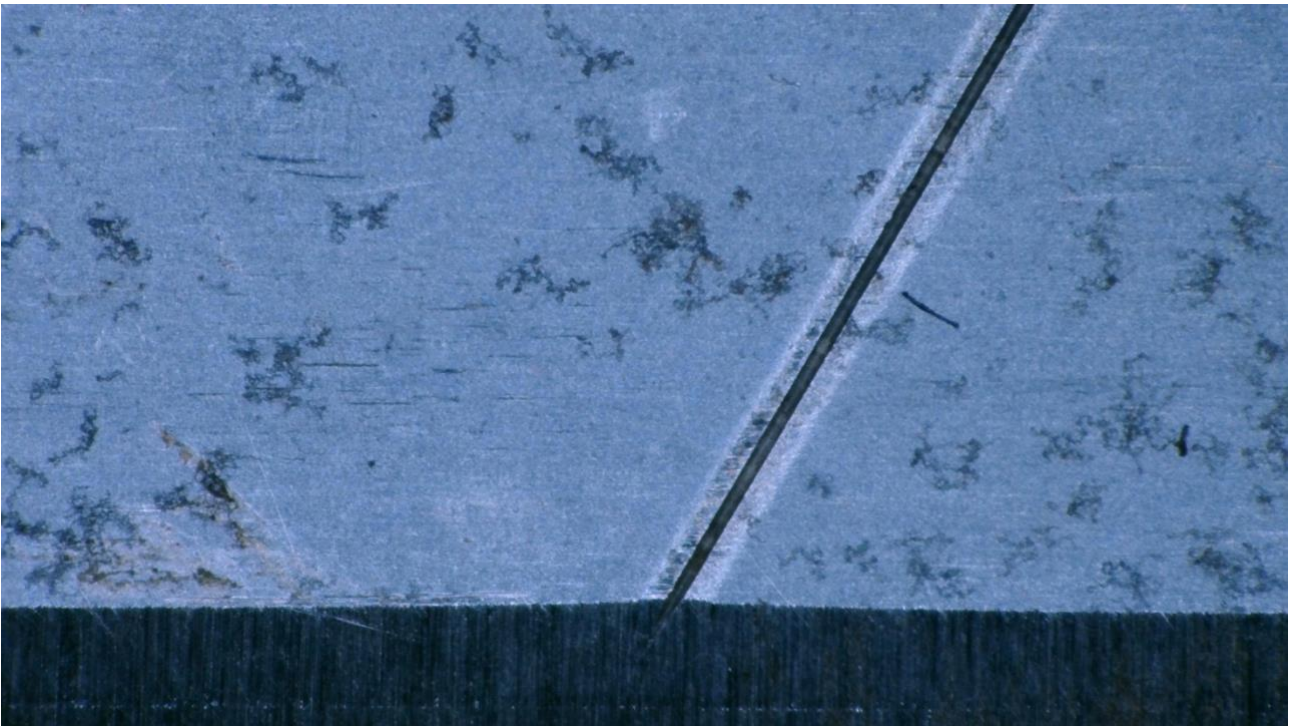


Figure 9 Rusty blade captured with ZM0480WU1080PA

6 Contacting Customer Service

Please contact your local distributor if you have any questions about the product.

Web:www.touptekphotonics.com