

## 4 Microscope Auto Focus HDMI CMOS Camera

### 4.1 XFCAM1080PHB/PHD Auto Focus HDMI's Characteristic

**XFCAM1080PHB/PHD** is a multiple interfaces (HDMI+WiFi+SD card, so **X** here means multiple interfaces) CMOS camera with autofocus function (**F** means autofocus) and it adopts ultra-high performance Sony CMOS sensor as the image-picking device. HDMI+WiFi are used as the data transfer interface to HDMI display or computer.

For HDMI output, The XCamView will be loaded and a camera control panel and toolbar are overlaid on the HDMI screen, in this case, the USB mouse can be used to set the camera, browse and compare the captured image, play the video ital.

For WiFi output, unplug the mouse and plug in the USB WiFi adapter, connect the computer WiFi to the camera, then the video stream can be transfer to computer with the advanced software ToupView. With ToupView, you can control the camera, process the image as ToupTek's other USB series camera.

**In HDMI and WiFi outputs, the camera embedded Auto/Manual focus function can obtain the clear image at ease. No hand rotation of the microscope Coarse/Fine knob is needed.**



The XFCAM1080PHD's basic characteristic is as follows:

- All in 1( HDMI+WiFi) C-mount camera with Sony high sensitivity CMOS sensor;
- 1920 × 1080 (1080P) video resolution;
- Record 1080P video(ASF format) into SD card;
- 5~2M resolution captured image(XFCAM1080PHB/PHD);
- HDMI/WiFi output simultaneously;
- **Auto/Manual focus with the movement of the sensor;**
- For HDMI output, XCamView is used to control the camera;
- For WiFi output, ToupView/ToupLite is used to control the camera;
- Ultra-Fine Color Engine with perfect color reproduction capability(WiFi);
- With advanced video & image processing application ToupView/ToupLite;
- Windows/Linux/macOS/Android multi-platform SDK;
- CNC Camera housing;

The possible applications of **XFCAM1080PHB/PHD** are as follows:

- Scientific research, education (teaching, demonstration and academic exchanges);
- Digital laboratory, medical research;
- Industrial visual (PCB examination, IC quality control);
- Medical treatment (pathological observation);
- Food (microbial colony observation and counting);
- Aerospace, military (high sophisticated weapons);

## 4.2 XFCAM1080PHB/PHD Datasheet(2)

Order Code	Sensor & Size(mm)	Pixel(μm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure
<b>XFCAM1080PHB XF1080B</b>	1080P/5M/Sony IMX178(C) 1/1.8"(6.22x4.67)	2.4x2.4	425mv with 1/30s 0.15mv with 1/30s	30@1920*1080(HDMI) 25@1920*1080(WiFi)	1x1	0.03ms~918ms
<b>XFCAM1080PHD XF1080D</b>	1080P/2M/Sony IMX185(C) 1/1.9"(7.20x4.05)	3.75x3.75	1120mv with 1/30s 0.15mv with 1/30s	60@1920*1080(HDMI) 25@1920*1080(WiFi)	1x1	0.06ms~918ms

C: Color; M: Monochrome;

<b>Interface &amp; Button Functions</b>		
	USB	USB Mouse/USB WiFi Adapter
	HDMI	HDMI Output
	DC12V	12V/1A Power in
	SD	SD Card Slot
	LED	Power Indicator Power
	ON/OFF	On/off Switch
<b>Other Specification for HDMI Output</b>		
UI Operation	With USB Mouse to operate on the embedded XCamView	
Image Capture	JPEG Format with 5M or 2M Resolution in SD Card ( <b>XFCAM1080PHB/PHD</b> )	
Video Record	ASF Format 1080P 30fps in SD Card(8G)	
Camera Control Panel	Including Exposure, Gain, White Balance, Color Adjustment, Sharpness and Denoising Control	
Auto-focus Control Panel	Including Auto-focus, Manual Focus, One Push AF and Conjugate Correction Functions	
Toolbar	Including Zoom, Mirror, Comparison, Freeze, Cross, WDR, Auto-focus, Browser Function, Setting, Multi-language and XCamView Version Information	
<b>Other Specification for WiFi Output</b>		
UI Operation	ToupView or ToupLite on Windows/Linux/OSX/Android Platform	
WiFi Performance	802.11n 150Mbps; RF Power 20dBm(Maximum)	
Maximum Connected Devices	3~6(According to the Environment and Connection Distance)	
White Balance	Auto White Balance	
Color Technique	Ultra-Fine™ Color Engine (WiFi)	
Capture/Control SDK	Windows/Linux/macOS/Android Multiple Platform SDK(Native C/C++, C#/VB.NET, Python, Java, DirectShow, Twain, etc)(WiFi)	
Recording System	Still Picture or Movie (WiFi)	
Software Environment (for USB2.0 Connection)		
Operating System	Microsoft® Windows® XP / Vista / 7 / 8 / 8.1/10(32 & 64 bit) OSx(Mac OS X) Linux	
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher	
	Memory:4GB or More	
	USB Port:USB2.0 High-speed Port(As Power Only, not as the USB Data Transfer)	
	Display:19" or Larger	
	CD-ROM	
<b>Operating Environment</b>		
Operating Temperature(in Centidegree)	-10~ 50	
Storage Temperature(in Centidegree)	-20~ 60	
Operating Humidity	30~80%RH	
Storage Humidity	10~60%RH	
Power Supply	DC 12V/1A Adapter	

## 4.3 XFCAM1080PHB/PHD and Microscope



XFCAM1080PHB/PHD and Its Back Panel

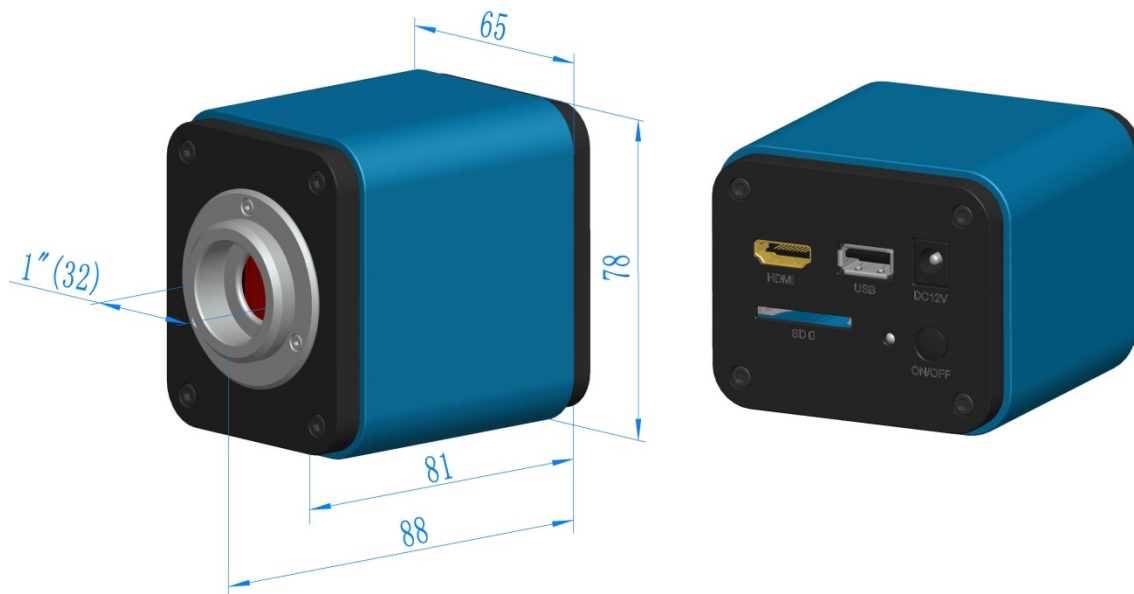


Different Views of XFCAM1080PHB/PHD



XFCAM1080PHB/PHD and Microscope

## 4.4 Dimension of XFCAM1080PHB/PHD



Dimension of XFCAM1080PHB/PHD




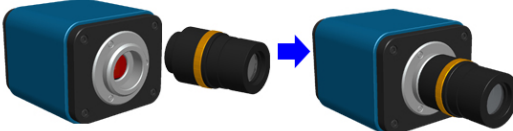

## 4.5 Packing Information for XFCAM1080PHB/PHD



Figure 4-1 Packing Information of XFCAM1080PHB/PHD

Standard Packing List		
A	Gift box : L:25.5cm W:17.0cm H:9.0cm (1pcs, 1.43Kg/ box)	
B	XFCAM1080PHB/PHD	
C	Power Adapter: Input: AC 100~240V 50Hz/60Hz, Output: DC 12V 1A American standard: Model: GS12U12-P11 12W/12V/1A: UL/CUL/BSMI/CB/FCC EMI Standard:EN55022,EN61204-3, EN61000-3-2,-3, FCC Part 152 class B, BSMI CNS14338 EMS Standard:EN61000-4-2,3,4,5,6,8,11,EN61204-3,Class A Light Industry Standard European standard:Model:GS12E12-P11 12W/12V/1A; TUV(GS)/CB/CE/ROHS EMI Standard:EN55022,EN61204-3, EN61000-3-2,-3, FCC Part 152 class B, BSMI CNS14338 EMS Standard:EN61000-4-2,3,4,5,6,8,11,EN61204-3,Class A Light Industry Standard	
D	HDMI Cable	
E	USB Mouse	
F	Wireless network adapter with USB interface	
G	CD (Driver & utilities software, Ø12cm)	
Optional Accessory		
H	Adjustable lens adapter	C-Mount to Dia.23.2mm Eyepiece Tube (Please choose 1 of them for your microscope) 108001/AMA037 108002/AMA050 108003/AMA075
		C-Mount to Dia.31.75mm Eyepiece Tube (Please choose 1 of them for your telescope) 108008/ATA037 108009/ATA050 108010/ATA075
I	Fixed lens Adapter	C-Mount to Dia.23.2mm Eyepiece Tube (Please choose 1 of them for your microscope) 108005/FMA037 108006/FMA050 108007/FMA075
		C-Mount to Dia.31.75mm Eyepiece Tube (Please choose 1 of them for your telescope) 108011/FTA037 108012/FTA050 108013/FTA075
<b>Note: For H and I optional items, please specify your camera type(C-mount, microscope camera or telescope camera), ToupTek engineer will help you to determine the right microscope or telescope camera adapter for your application;</b>		
J	108015(Dia.23.2mm to 30.0mm Ring)/Adapter rings for 30mm eyepiece tube	
K	108016(Dia.23.2mm to 30.5mm Ring)/ Adapter rings for 30.5mm eyepiece tube	
L	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.)
M	SD Card(4G or 8G)	

## 4.6 Extension of XFCAM1080PHB/PHD with Microscope or Telescope Adapter

Extension	Picture	
<p>C-mount Camera</p>	 <p>Machine vision; Medical imaging; Semiconductor equipment; Test instruments; Document scanners; 2D barcode readers; Web camera and security video; Microscope imaging;</p>	
<p>Microscope Camera</p>	 <p>XFCAM1080PHD+AMAXXX(23.2mm Adapter)</p>	 <p>XFCAM1080PHD+FMAXXX(23.2mm Adapter)</p>
<p>Telescope Camera:</p>	 <p>XFCAM1080PHD+ATAXXX(31.75mm Adapter)</p>	 <p>XFCAM1080PHD+FTAXXX(31.75mm Adapter)</p>