5.4 ALPHA1080 Series HDMI+USB Outputs C-mount CMOS Camera(2)

5.4.1 ALPHA1080 Series' Basic Characteristics

ALPHA1080 series is a multiple outputs (HDMI+USB2.0+SD card) C-mount CMOS camera and it adopts ultra-high performance Sony CMOS sensor as the image-picking device. HDMI+USB2.0 are used as the data transfer interface to HDMI display or computer.

For HDMI camera mode, The **XCamView** will be loaded and the **Camera Control Panel**+ **Measurement Toolbar** and **Synthesis Camera Control Toolbar** are overlaid on the HDMI screen with the mouse move to the related region, in this case, the USB mouse can be used to set the camera, browse and compare the captured image, play the video and perform the measurement ital.

For **USB Video** camera mode, plug in the micro USB host cable to the camera's **USB Video** port and computer USB port, then the video stream can be transfer to computer with the advanced software ToupView/ToupLite. With ToupView/ToupLite, you can control the camera, process the video and image as ToupTek's other USB series camera.

The **ALPHA1080** series' basic characteristics are as follows:

For **HDMI** output:

● All in 1(HDMI+USB+SD card) C-mount camera with Sony high sensitivity CMOS sensor;

● Simultaneous HDMI & USB output;

● Built-in mouse control;

● Built-in image capture & video record to SD card;

● Built-in camera control panel, including exposure(manual/auto)/gain, white balance(lockable), color adjustment, sharpness control;

● Built-in video and image measurement;

● Built-in toolbar including zoom, mirror, comparison, freeze, cross, browser functions;

● Built-in image & video browsing, display & play;

● Real time clock(RTC)

For **USB Video** mode:

● Ultra-Fine color engine with perfect color reproduction capability(USB);

- With advanced video & image processing application ToupView, which including professional image processing such as 2D measurement, HDR, image stitching, EDF(Extended Depth of Focus), image segmentation & count, image stacking, color composite and denoising(USB);

- Support standard UVC protocol for Windows/Linux/Mac(USB);

- CNC precision machining shell;

The possible applications of ALPHA1080 series are as follows:

- Scientific research, education (teaching, demonstration and academic exchanges);

- Digital laboratory, medical research;

- Industrial visual (PCB examination, IC quality control, mechanical part measurement);

- Medical treatment (pathological observation);

- Food (microbial colony observation and counting);

- Aerospace, military (high sophisticated weapons);

5.4.2 ALPHA1080 Series Datasheet(2)

Order Code	Sensor & Size(mm)	Pixel(μm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure
ALPHA1080A AL1080A	1080P/Sony IMX290 1/2.8"(5.57x4.13)	2.9x2.9	1300mv with 1/30s 0.15 mv with 1/30s	26@1920*1080P(HDMI) 26@1920*1080(USB)	1x1	0.036ms~8s
ALPHA1080B AL1080B	1080P/Sony IMX185 1/1.9"(7.20x4.50)	3.75x3.75	1120mv with 1/30s 0.15 mv with 1/30s	26@1920*1080P(HDMI) 26@1920*1080(USB)	1x1	0.34ms~4s

C: Color; M: Monochrome;

Interface & Button Functions

HDMI	HDMI Output	
USB Mouse	USB Mouse for the Control of the HDMI Mode	
USB Video	USB Video for the PC	
LED	Camera Status Indicate	
SD	SD Card Slot	
DC12V	12V/1A Power in	
ON/OFF	Power ON/OFF Switch	

Other Specification for HDMI Output

UI Operation	With USB Mouse for HDMI Mode
Image Capture	High Speed in SD Card(8G)
Video Record	1080P 26fps in SD Card(8G)(AVI Format in SD Card)
Camera Control Panel	Including Exposure, Gain, White Balance, Color Adjustment and Sharpness Control
Toolbar	Including Zoom, Mirror, Comparison, Freeze, Cross, Browser Function

Other Specification for USB Output

White Balance	Auto White Balance, Manual White Balance, ROI White Balance(👍)
Color Technique	Ultra-Fine™ Color Engine (USB2.0)
Capture/Control SDK	Standard UVC for Windows(USB2.0)
Recording System	Still Picture or Movie (HDMI or USB)

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
	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
Power Supply	DC 12V/1A Adapter

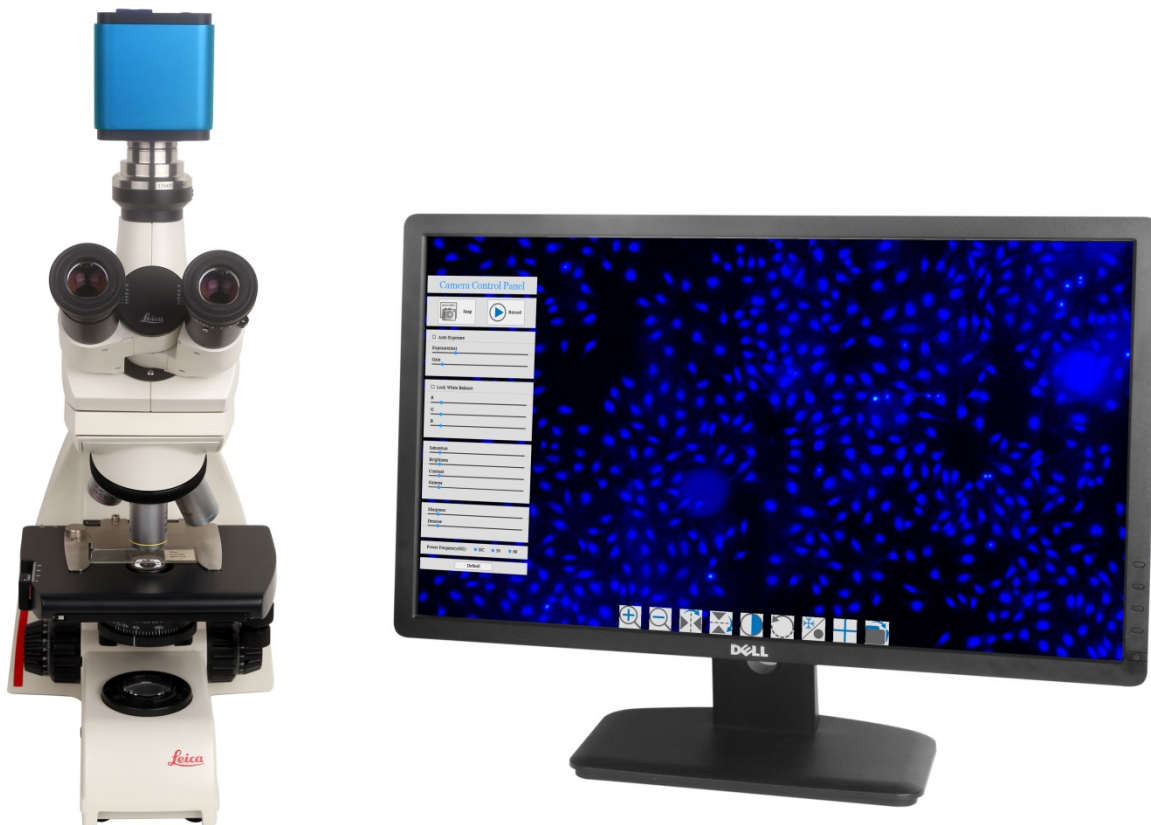## 5.4.3 ALPHA1080 Series and Microscope

ALPHA1080 Series and Its Back Panel

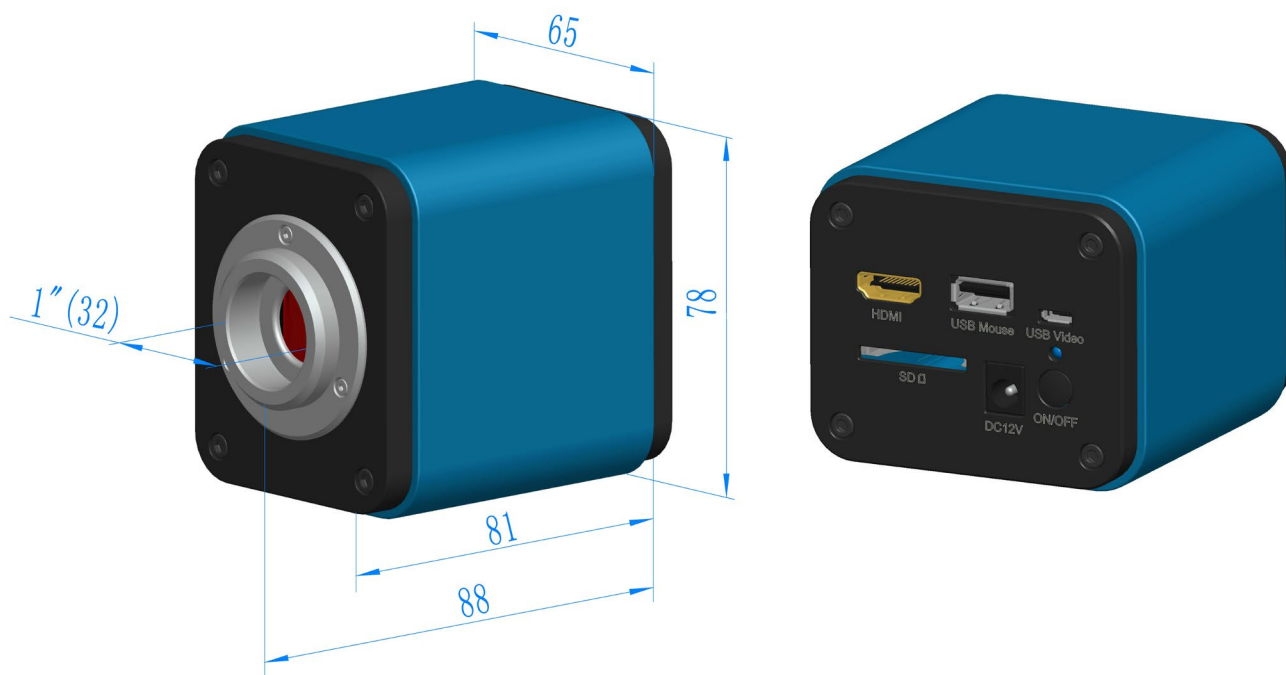Different Views of ALPHA1080 Series

ALPHA1080 Series and Microscope

ALPHA1080 Series+ Microscope+Display

ALPHA1080 XCamView UI for Mouse Control

5.4.4 Dimension of ALPHA1080 Series

Dimension of ALPHA1080 Series

5.4.5 Packing Information for ALPHA1080 Series

Packing Information of ALPHA1080
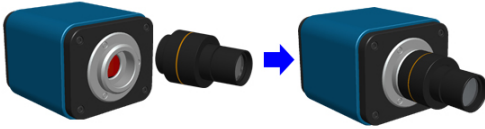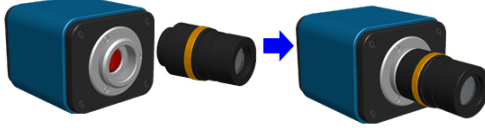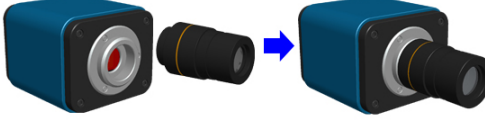
Standard Packing List	
A	Gift box : L:25.5cm W:17.0cm H:19.0cm (1pcs, 1.55kg/ box)
B	ALPHA1080 Series camera
C	Power Adapter: Input: AC 100~240V 50Hz/60Hz, Output: DC 12V 1A American standard: Model: GS12U12-P1I 12W/12V/1A: UL/CUL/BSMI/CB/FCC EMI Standard:EN55022,EN61204-3, EN61000-3-2,-3, FCC Part 152 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-P1I 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	Micro USB2.0 cable /2.0m
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
	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;		
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,8G,16G)		

5.4.6 Extension of ALPHA1080 with Microscope or Telescope Adapter

Extension	Picture
C-mount camera	Machine vision; Medical imaging; Semiconductor equipment; Test instruments; Document scanners; 2D barcode readers; Microscope imaging;
Microscope Camera	ALPHA1080+AMAXXX(23.2mm Adapter) ALPHA1080+FMAXXX(23.2mm Adapter)
Telescope Camera	ALPHA1080+ATAXXX(31.75mm Adapter) ALPHA1080+FTAXXX(31.75mm Adapter)

5.4.7 Sample Photos Captured with ALPHA1080A

5.4.7 Sample Photos Captured with ALPHA1080A