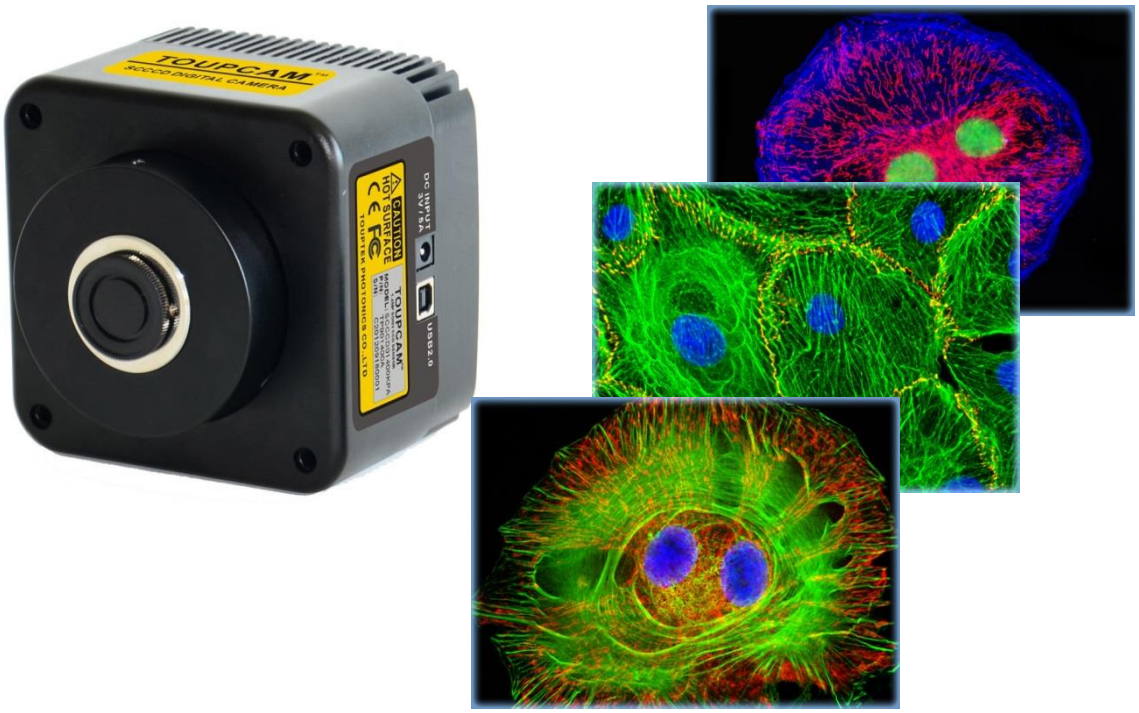
ToupTek Product Catalog



October 1, 2014

Product Catalog

1 Introduction to ToupCam Cameras

For Microscope, Telescope and Industrial Applications

1.1 Microscope

ToupTek® will work with you to choose and integrate the optimal camera for your microscopy project. Ideal for use in any laboratory setting, ToupTek cameras let you capture high-quality imager with your existing microscope equipment. Our microscopy cameras and associated software are designed to offer consistent, high-quality image acquisition and performance.

1.2 Telescope

ToupTek®'s cameras also support telescopes. It works perfectly with any kind of optical telescope. The images of the observed object can be accurately displayed on a computer screen. With the software ToupView, it is very convenient to preview live images and to capture still pictures. The powerful advanced software ToupView included with the camera ensures simple and convenient operation on the captured images.
How do you mount a ToupTek®' camera for telescope onto a telescope? It is simple and easy. Remove the eyepiece from the telescope's ocular tube. Insert a camera into the ocular tube and secure it by tightening the locking-screw. Plug the camera into the USB2.0 port on your computer. That's all there is to it!

1.3 Machine Vision

ToupTek®'s experience in the machine vision industry will assist you with selecting and integrating the optimal industrial camera best suited to your application. The industry leading ToupTek® Software Developers Kit (SDK) streamlines and simplifies the integration of cameras into your machine vision project with one API for all cameras.
Along with our wide range of standard CMOS and CCD cameras, ToupTek® provides custom design services to alter one of our existing cameras, or creating one for your unique requirements. One of the many advantages of choosing ToupTek® to supply you and your business is the flexibility to opportunities in an ever-changing global market. With all the choices that are available to you, we ensure you get that you're getting the camera that will perform, with a quality that has been designed to last. We at ToupTek® pride ourselves on the quality of our digital cameras, including the after sales support that you receive with your purchase. The opportunity to provide you with an industry leading camera and software solution for your application would be our pleasure.

1.4 Product Nomenclature

	UHCCD	05100K	P	A	-U	-ET	-S	-C	-SQ	-NA
	1	2	3	4	5	6	7	8	9	10
1	Series Name: SCCCD, U3CCD, U3CMOS, EXCCD, UHCCD, UCMOS or SCMOS,HCAM, XCAM, L3CMOS，LCMOS,WCAM									
2	Pixel Number: eg. 05100K: 5.1 Mega pixels									
3	Color Mode, M: Monochromatic; P: Polychromatic									
4	Sensor Distinguishing Code, such as A, B, C or D…									
5	Data Output Interface Model, U: USB; D: DVI; V: VGA; A: Analog									
6	Trigger Type, ET: External Trigger; NA: Not Available									
7	Cooled Type, S: Semiconductor Cooled; F: Fan Cooled; N: Natural Cooled									
8	Optical-Mechanical Interface Type, C: C-mount; M: Microscope; T: Telescope; S: Sporting Scope									
9	Mechanical Shape , CY: Cylinder; SQ: Square; CP: Compact									
10	TV System (Analog Cameras Only), PA: PAL; NT: NTSC; NA: Not Available									

1.5 ToupCam Camera Series Comparison

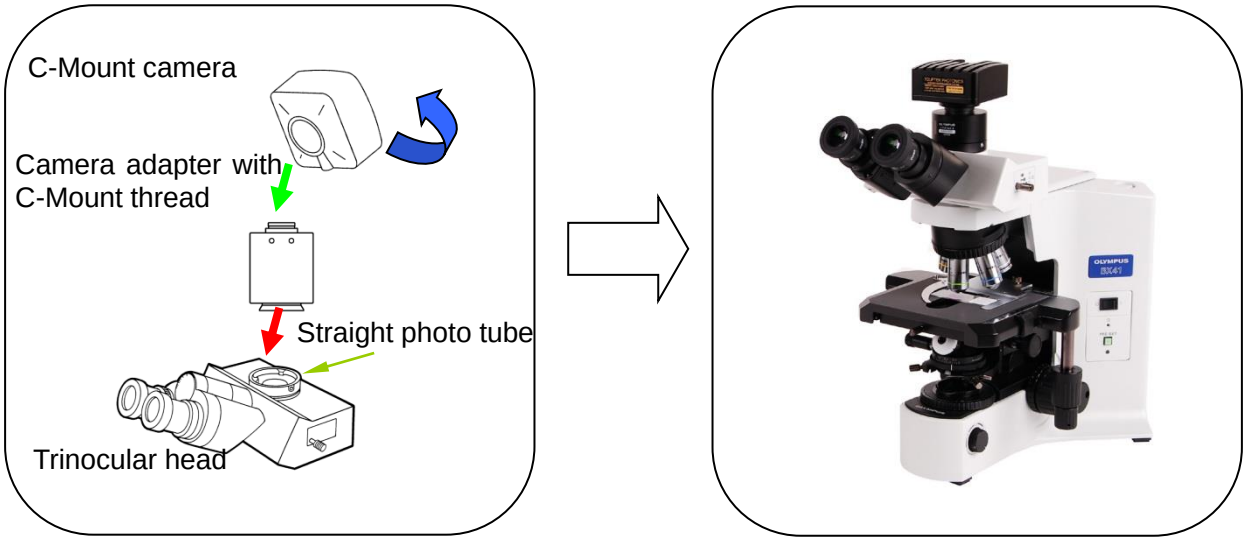
Camera Series	Interface	Characteristic
SCCCD	USB2.0	● Semiconductor cooling CCD camera with Sony Super HAD/EXView CCD sensor. Heap pipe is used to achieve high performance heat radiation. Up to 20 degrees

		temperature drop ensures high quality video or image with lower noise;
UHCCD	USB2.0	● High Speed CCD camera with Sony Super HAD CCD sensor;
EXCCD	USB2.0	● High Speed CCD camera with Sony EXview HAD CCD sensor. It could be used for dark filed applications due to its high sensitivity, such as fluorescence applications;
L3CMOS	USB3.0	● Super speed USB3.0 camera with on-board memory for Aptina and Sony CMOS Sensor; ● High performance cooling structure ensures low image noise;
LCMOS	USB2.0	● High speed USB2.0 camera with on-board memory for Aptina and Sony CMOS Sensor; ● On-board memory helps the camera to achieve the bandwidth limitation of USB2.0 and make the camera work stable for different computers with different configuration.High performance cooling structure ensures low image noise;
U3CMOS	USB3.0	● Super speed USB3.0 camera with Aptina CMOS Sensor The most cost-effective USB3.0 imaging solution;
UCMOS	USB2.0	● High speed USB2.0 camera with Aptina CMOS Sensor; ● The most cost-effective USB2.0 imaging solution;
SCMOS	USB2.0	● Microscope eyepiece economic camera with 23.2 diameter and compact size;
HCAM	USB2.0	● Handheld USB2.0 Microscope with 10X to 1300X magnification;
ICMOS	USB2.0	● USB2.0 industrial camera with on-board memory for perfect synchronization and stable performance; ● 8-pin Hirose HR25-7TR-8PA GPIO connector for optical coupler isolation trigger, strobe (Optional); ● Compact industrial standard size (29x29x29 mm)for easy integration;
XCAM	HDMI/VGA	● HDMI & VGA output camera; ● DSP inside ensuring high image quality and versatile functions; ● Including automatic white balance and exposure on/off (AEWB), saving images to SD card (SAVE), video stream and freeze on/off (FREEZE), multiple groups of cross lines and remote image snapshot controller to reduce the vibration blur (REMOTE);
WCAM	WIFI	● WIFI cameras. H.264 or MJPEG compression ensures high quality video; ● WiFi-enabled devices could be used to receive the video, such as smartphones, computers, and tablets with iOS, Android, and Windows operating systems; ● Mulitple users could have access to one camera simultaneously(up to 10); ● Born with ToupView imaging software for quantifying, measuring, and annotating images which is downloadable from app store viewing, capturing, and editing images(Windows OS Only);

2 ToupCam® Camera & Microscope Configuration

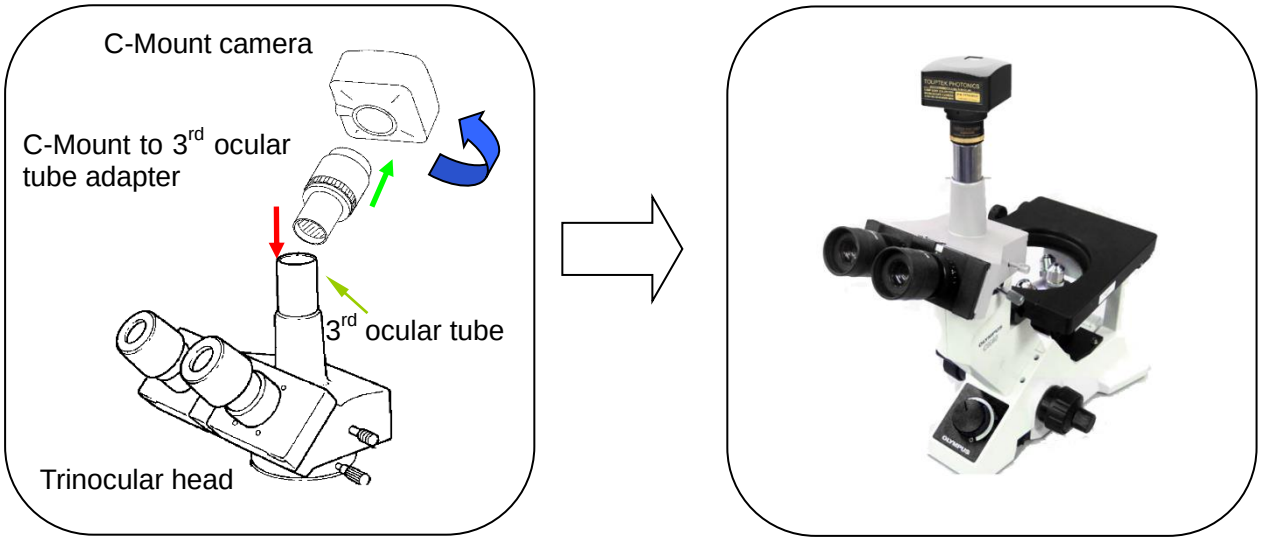
2.1 Trinocular Digital Microscope (1/2)

Attach the C-mount camera and Adaptor to the straight photo tube



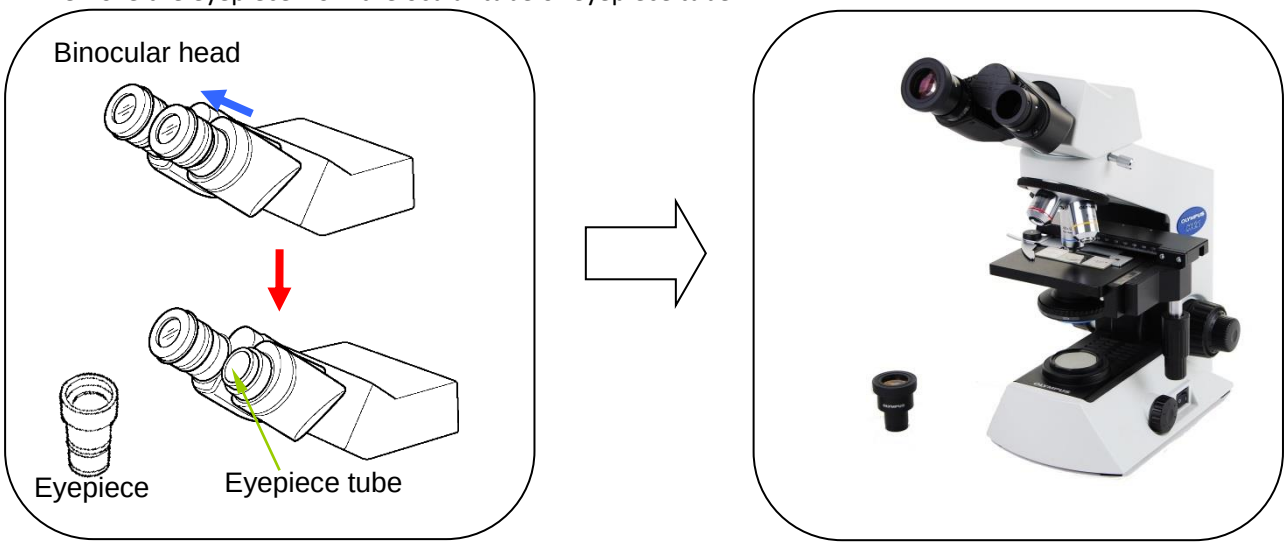
2.2 Trinocular Digital Microscope (2/2)

Attach the C-Mount camera and Adaptor to the 3rd ocular tube or eyepiece tube

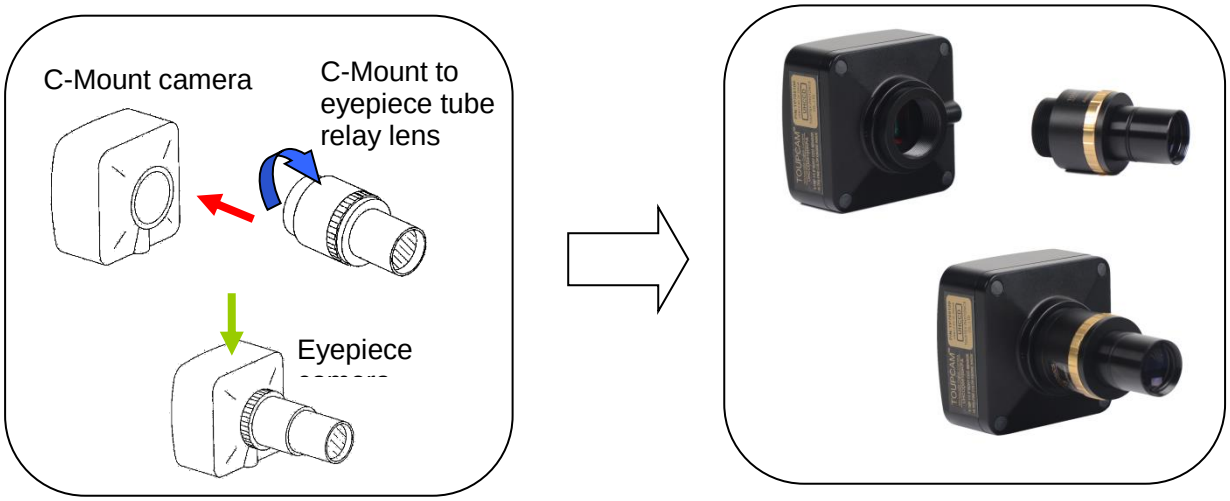


2.3 Binocular Digital Microscope

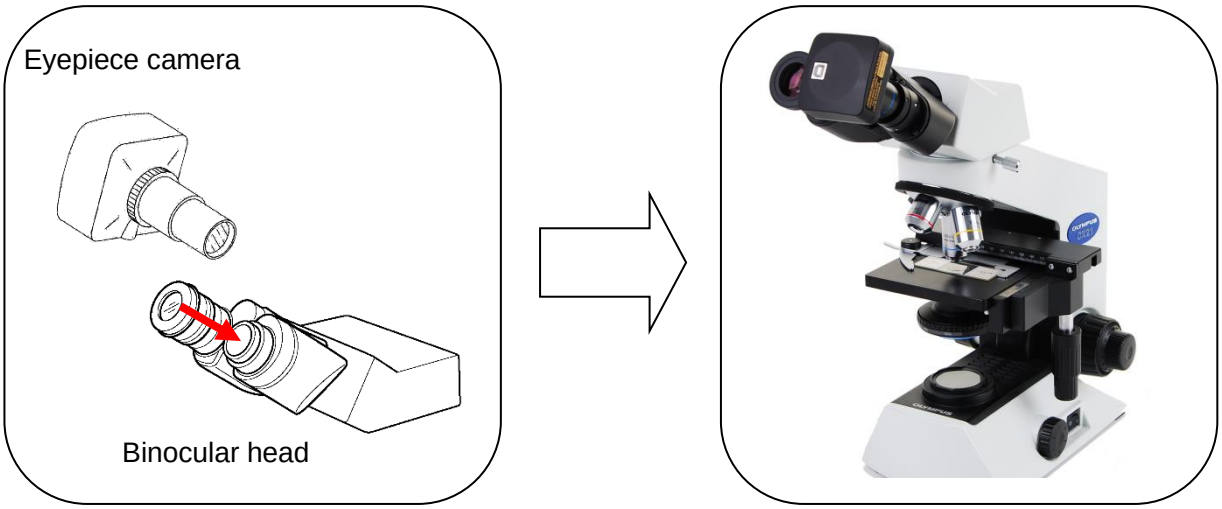
STEP 1: Remove the eyepiece from the ocular tube or eyepiece tube



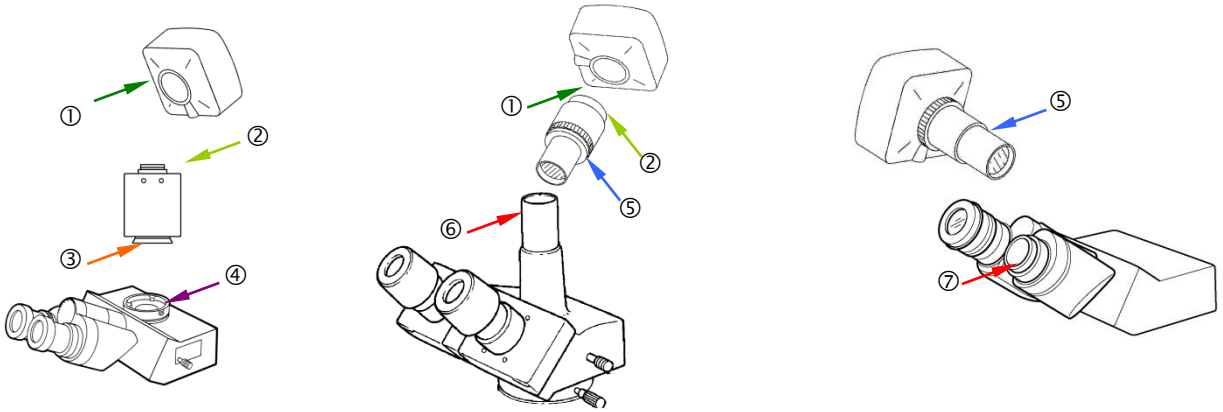
STEP 2: Attach (Screw) the camera Adaptor to the C-mount camera



STEP 3: Attach (Insert) the eyepiece camera into the ocular tube or eyepiece tube



2.4 Size Description of the Connection Parts

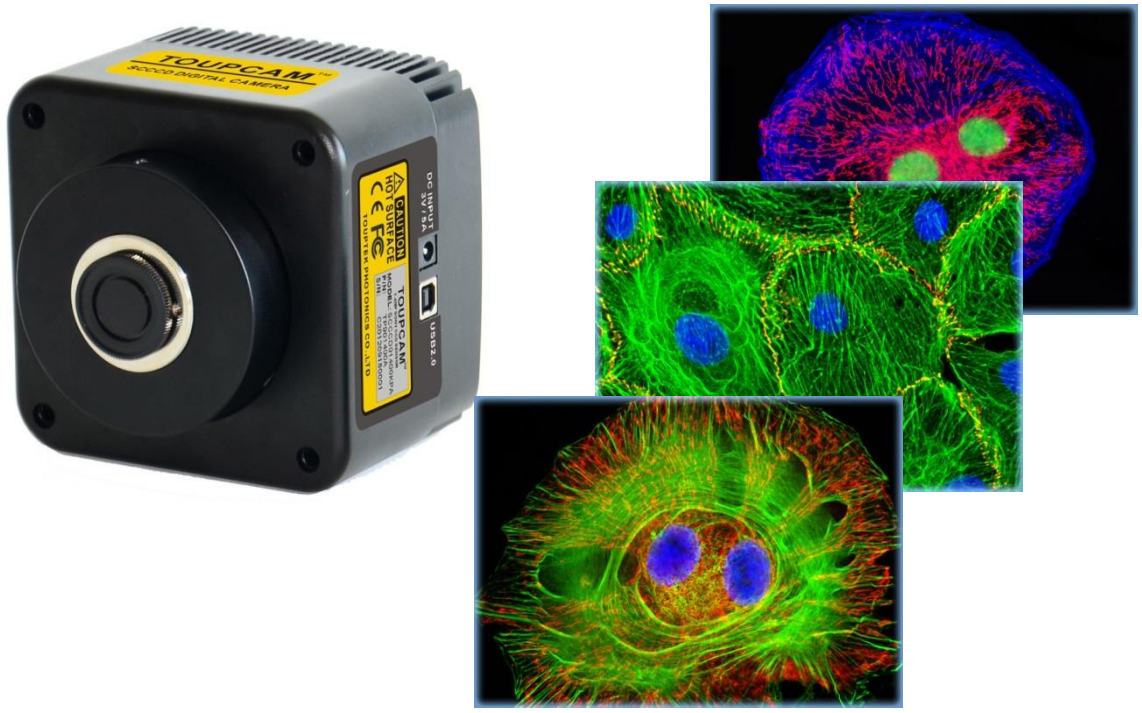


① Standard C-Mount: Dia.1 inch (25.4mm) female thread
② Standard C-Mount: Dia.1 inch (25.4mm) male thread
③ Camera adaptor connector: size varies between microscope brands
④ Straight photo tube: size varies between microscope brands
⑤ Relay lens: standard eyepiece connector size, Dia.23.2mm (male)
⑥ 3rd ocular tube: standard eyepiece connector size, Dia.23.2mm (female)
⑦ Ocular tube: standard eyepiece connector size, Dia.23.2mm (female)

3 SCCCD Series USB2.0 TE-Cooling Camera

3.1 SCCCD Basic Characteristic

- C-Mount camera has 25.4 mm or 1 inch diameter with 32 threads per inch;
- Scientific research grade camera with SONY EXview or Super HAD CCD sensor;
- With hardware resolution from 1.4M to 5.2M;
- Well-designed high-performance TE-cooling with heat pipe heat sink structure; Up to 20 degrees temperature drop ensures high quality video or image with lower noise;
- USB2.0 interface ensuring high speed data transmission;
- Supporting up to 4 minutes' long time exposure;
- Ultra-Fine^{TM} color engine with perfect color reproduction capability;
- With advanced video & image processing application ToupView;
- Custom programmable with SDK provided;



3.2 SCCCD Datasheet

Order Code	Sensor	Sensor Size(mm)	Pixel(μm)	FPS/Resolution	Binning	Exposure
SCCCD05200KPA TP905200A	ICX655AQ(C)	2/3“ (9.93x8.70)	3.45x3.45	4.3@2448x2050 10.5@960x720	1x1	0.22ms~60s
SCCCD01400KPA TP901400A	ICX285AQ(C)	2/3“ (10.2x8.3)	6.45x6.45	15@1360x1024	1x1	0.12ms~240s
SCCCD01400KPB TP901400B	ICX205AK(C)	1/2“ (7.60x6.20)	4.65x4.65	15@1360x1024	1x1	0.12ms~240s
SCCCD01400KMA TM901400A	ICX285AL(M)	2/3“ (10.2x8.3)	6.45x6.45	15@1360x1024	1x1	0.12ms~240s
SCCCD01400KMB TM901400B	ICX205AL(M)	1/2“ (7.60x6.20)	4.65x4.65	15@1360x1024	1x1	0.12ms~240s

C:Color; M:Monochrome;

Other Specification for SCCCD Cameras	
Spectral Range	380-650nm (with IR-cut Filter)
White Balance	ROI White Balance/ Manual Temp Tint Adjustment/NA for Monochromatic Sensor
Color Technique	Ultra-Fine™ Color Engine/NA for Monochromatic Sensor
Capture/Control API	Native C/C++, C#, DirectShow, Twain and Labview
Recording System	Still Picture and Movie
Cooling System*	TE-cooling System -20 ℃ below Ambient Temperature

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 5V over PC USB Port External Power Adaptor for Cooling System, DC3V, 5A

Software Environment	
Operating System	Microsoft® Windows® XP / Vista / 7 / 8 (32 & 64 bit) OSx(Mac OS X) Linux
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory:2GB or More
	USB Port:USB2.0 High-speed Port
	Display:17” or Larger
	CD-ROM

4 UHCCD Series USB2.0 Camera

4.1 UHCCD Basic Characteristic

- C-Mount camera has 25.4 mm or 1 inch diameter with 32 threads per inch;
- Scientific research grade camera with Sony Super HAD CCD sensor;
- With hardware resolution among 5.2M to 0.8M;
- Integrated zinc aluminum alloy housing;
- USB2.0 interface ensuring high speed data transmission;
- Ultra-Fine^{TM} color engine with perfect color reproduction capability;
- With advanced video & image processing application ToupView;
- Custom programmable with SDK provided;

4.2 UHCCD Datasheet

Order Code	Sensor	Size(mm)	Pixel(μm)	FPS/Resolution	Binning	Exposure
UHCCD05200KPA TP705200A	ICX655AQ(C)	2/3“ (9.93x8.70)	3.45x3.45	4.3@2448x2050 10.5@960x720	1x1	0.22ms~60s
UHCCD05100KPA TP705100A	ICX452AQ(C)	1/1.8“ (8.23x6.68)	2.775x2.775	4@2592x1944 35@300x200	1x1, 2x2	0.212ms~77ms
UHCCD05000KPA TP705000A	ICX282AQ(C)	2/3“ (9.74x7.96)	3.40x3.40	4.5@2560x1920 9@1280x960	1x1, 2x2	0.203ms~60s
UHCCD03100KPB TP703100B	ICX252AQ(C)	1/1.8“ (8.10x6.64)	3.45x3.45	6@2048x1536 41@640x480	1x1,2x2	0.178ms~77ms,
UHCCD02000KPA TP702000A	ICX274AQ(C)	1/1.8“ (8.50x6.80)	4.40x4.40	10@1600x1200	1x1	0.135ms~60s
UHCCD01400KPA TP705140A	ICX205AK(C)	1/2“ (7.60x6.20)	4.65x4.65	8@1360x1024	1x1	0.227ms~60s
UHCCD01400KPB TP701400B	ICX205AK(C)	1/2“ (7.60x6.20)	4.65x4.65	15@1360x1024	1x1	0.127ms~60s
UHCCD00800KPA TP700800A	ICX204AK(C)	1/3“ (5.80x4.92)	4.65x4.65	16@1024x768	1x1	0.16ms~60s

C:Color; M:Monochrome;

Other Specification for UHCCD Cameras

Spectral Range	380-650nm (with IR-cut Filter)
White Balance	ROI White Balance/ Manual Temp Tint Adjustment/NA for Monochromatic Sensor
Color Technique	Ultra-Fine™ Color Engine/NA for Monochromatic Sensor
Capture/Control API	Native C/C++, C#, DirectShow, Twain and Labview
Recording System	Still Picture and Movie
Cooling System*	Natural

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 5V over PC USB Port

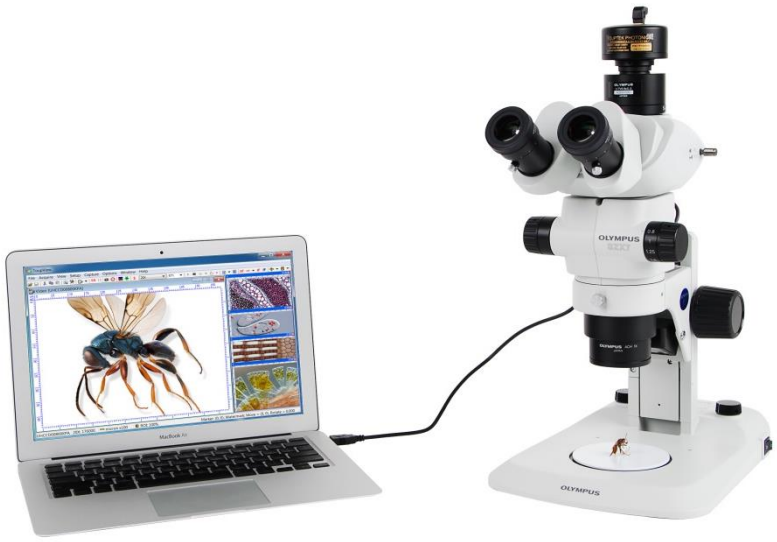
Software Environment

Operating System	Microsoft® Windows® XP / Vista / 7 / 8 (32 & 64 bit) OSx(Mac OS X) Linux
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory:2GB or More
	USB Port:USB2.0 High-speed Port
	Display:17” or Larger
	CD-ROM

5 EXCCD Series USB2.0 Camera

5.1 EXCCD Basic Characteristic

- C-Mount camera has 25.4 mm or 1 inch diameter with 32 threads per inch;
- Scientific research grade camera with Sony EXview HAD CCD sensor with ultralow noise;
- With hardware resolution from 1.4M to 0.3M;
- Integrated zinc aluminum alloy housing;
- USB2.0 interface ensuring high speed data transmission;
- Ultra-Fine^{TM} color engine with perfect color reproduction capability;
- With advanced video & image processing application ToupView;
- Custom programmable with SDK provided;



5.2 EXCCD Datasheet

Order Code	Sensor	Size(mm)	Pixel(μm)	FPS/Resolution	Binning	Exposure
EXCCD01400KPA TP801400A	ICX285AQ(C)	2/3“ (10.2x8.3)	6.45x6.45	15@1360x1024	1x1	0.126ms~240s
EXCCD01400KMA TM801400A	ICX285AL(M)	2/3“ (10.2x8.3)	6.45x6.45	15@1360x1024	1x1	0.126ms~240s
EXCCD00300KMA TM800300A	ICX618AL(M)	1/4“ (4.46x3.80)	5.6x5.6	72@640x480	1x1	0.06ms~40s,

C: Color; M: Monochrome;

Other Specification for EXCCD Cameras

Spectral Range	380-650nm (with IR-cut Filter)
White Balance	ROI White Balance/ Manual Temp Tint Adjustment /NA for Monochromatic Sensor
Color Technique	Ultra-Fine™ Color Engine /NA for Monochromatic Sensor
Capture/Control API	Native C/C++, C#, DirectShow, Twain and Labview
Recording System	Still Picture and Movie
Cooling System*	Natural

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 5V over PC USB Port

Software Environment

Operating System	Microsoft® Windows® XP / Vista / 7 / 8 (32 & 64 bit) OSx(Mac OS X) Linux
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory:2GB or More
	USB Port:USB2.0 High-speed Port
	Display:17” or Larger
	CD-ROM

6 U3CMOS Series USB3.0 Camera

6.1 U3CMOS Basic Characteristic

- C-Mount camera has 25.4 mm or 1 inch diameter with 32 threads per inch;
- Scientific research grade camera with Aptina CMOS sensor;
- With hardware resolution among 3.0M to 14M;
- Integrated zinc aluminum alloy housing;
- USB3.0 5 Gbps interface ensuring high frame rate;
- Ultra-Fine^{TM} color engine with perfect color reproduction capability;
- With advanced video & image processing application ToupView;
- Custom programmable with SDK provided;

6.2 U3CMOS Datasheet

Order Code	Sensor	Size(mm)	Pixel(μm)	FPS/Resolution	Binning	Exposure
U3CMOS14000KPA TP114000A	MT9F002(C)	1/2.3"(6.451x4.603)	1.4x1.4	6.2@4096x3286 20.8@2048x1644 53.3@1024x822	1x1, 2x2, 4x4	0.4~2000ms
U3CMOS100000KPA TP110000A	MT9J003(C)	1/2.3" (6.44x4.616)	1.67x1.67	7.2@3584x2746 24.5@1792x1372	1x1, 2x2, 4x4	0.38~2000ms
U3CMOS08500KPB TP108500A	Special(C)	1/2.4"(5.557x4.255)	1.67x1.67	8.3@3328x2548 26.2@1664x1272	1x1, 2x2, 4x4	0.1~2000ms
U3CMOS05100KPA TP105100A	MT9P006(C)	1/2.5" (5.7x4.28)	2.2x2.2	14.2@2560x1922 38.3@1280x960 101.2@640x480	1x1, 2x2, 4x4	0.05~2000ms
U3CMOS03100KPA TP103100A	AR0330(C)	1/3" (4.505x3.38)	2.2x2.2	27.3@2048x1534 53.3@1024x770	1x1, 2x2	0.1~2000ms

C: Color; M: Monochrome;

Other Specification for U3CMOS Camera

Spectral Range	380-650nm (with IR-cut Filter)
White Balance	ROI White Balance/ Manual Temp Tint Adjustment/NA for Monochromatic Sensor
Color Technique	Ultra-Fine™ Color Engine/NA for Monochromatic Sensor
Capture/Control API	Native C/C++, C#, DirectShow, Twain and Labview
Recording System	Still Picture and Movie
Cooling System*	Natural

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 5V over PC USB Port

Software Environment

Operating System	Microsoft® Windows® XP / Vista / 7 / 8 (32 & 64 bit) OSx(Mac OS X) Linux
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory:2GB or More
	USB Port:USB3..0 High-speed Port
	Display:17" or Larger
	CD-ROM

7 L3CMOS Series USB3.0 Camera

7.1 L3CMOS Basic Characteristic

- C-Mount camera has 25.4 mm or 1 inch diameter with 32 threads per inch;
- Scientific research grade camera with Aptina CMOS sensor;
- With hardware resolution among 1.2M to 14M;
- On-board memory for perfect synchronization， higher frame rate and stable performance;
- High performance cooling structure, ensures low image noise;
- USB3.0 5 Gbps interface ensuring high frame rate;
- Ultra-Fine^{TM} color engine with perfect color reproduction capability;
- With advanced video & image processing application ToupView;
- Custom programmable with SDK provided;

7.2 L3CMOS Datasheet

Order Code	Sensor	Size(mm)	Pixel(μm)	FPS/Resolution	Binning	Exposure
L3CMOS14000KPA **LP114000A**	MT9F002(C)	1/2.3"(6.451x4.603)	1.4x1.4	6.2@4096x3286 20.8@2048x1644 53.3@1024x822	1x1, 2x2, 4x4	0.1~2000
L3CMOS100000KPA **LP110000A**	MT9J003(C)	1/2.3" (6.44x4.616)	1.67x1.67	7.2@3584x2746 24.5@1792x1372	1x1, 2x2, 4x4	0.1~2000
L3CMOS08500KPA **LP108500A**	Special(C)	1/2.4"(5.557x4.255)	1.67x1.67	8.3@3328x2548 26.2@1664x1272	1x1, 2x2, 4x4	0.1~2000
L3CMOS05100KPA **LP105100A**	MT9P006(C)	1/2.5" (5.7x4.28)	2.2x2.2	14.2@2560x922 38.3@1280x960 101.2@640x480	1x1, 2x2, 4x4	0.05~2000
L3CMOS03100KPA **LP103100A**	AR0330(C)	1/3" (4.505x3.37)	2.2x2.2	27.3@2048x1534 53.3@1024x770	1x1, 2x2	0.1~2000
L3CMOS01200KPB **LP101200B**	AR0130(C)	1/3" (4.8x3.6)	3.75 x3.75	45@1280x960 55@640x480	1x1, 2x2	0.10~2000

C: Color; M: Monochrome;

Other Specification for L3CMOS Camera

Spectral Range	380-650nm (with IR-cut Filter)
White Balance	ROI White Balance/ Manual Temp Tint Adjustment/NA for Monochromatic Sensor
Color Technique	Ultra-Fine™ Color Engine/NA for Monochromatic Sensor
Capture/Control API	Native C/C++, C#, DirectShow, Twain and Labview
Recording System	Still Picture and Movie
Cooling System*	Natural with High Performance Cooling Structure

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 5V over PC USB Port

Software Environment

Operating System	Microsoft® Windows® XP / Vista / 7 / 8 (32 & 64 bit) OSx(Mac OS X) Linux
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory:2GB or More
	USB Port:USB3.0 High-speed Port
	Display:17" or Larger
	CD-ROM

8 LCMOS Series USB2.0 Camera

8.1 LCMOS Basic Characteristic

- C-Mount camera has 25.4 mm or 1 inch diameter with 32 threads per inch;
- Scientific research grade camera with Aptina CMOS sensor;
- With hardware resolution among 1.2M to 14M;
- On-board memory for perfect synchronization， higher frame rate and stable performance;
- High performance cooling structure, ensures low image noise;
- USB2.0 interface ensuring high speed data transmission;
- Ultra-Fine^{TM} color engine with perfect color reproduction capability;
- With advanced video & image processing application ToupView;
- Custom programmable with SDK provided;

8.2 LCMOS Datasheet

Order Code	Sensor	Size(mm)	Pixel(μm)	FPS/Resolution	Binning	Exposure
LCMOS14000KPA LP614000A	MT9F002(C)	1/2.3"(6.451x4.603)	1.4x1.4	2.7@4096x3288 10@2048x1644 35@1024 x822	1x1, 2x2, 4x4	0.4ms~2000ms
LCMOS100000KPA LP610000A	MT9J003(C)	1/2.3" (6.44x4.616)	1.67x1.67	3.7@3584x2748 13@1792x1374 35@896 x684	1x1, 2x2, 4x4	0.4ms~2000ms
LCMOS09000KPB LP609000B	Special(C)	1/2.4"(5.825x4.369)	1.67x1.67	3.9@3488x2616 15@1744x1308 47@872 x654	1x1, 2x2, 4x4	0.4ms~2000ms
LCMOS08000KPB LP608000B	Special(C)	1/2.5"(5.451x4.088)	1.67x1.67	4.4@3264x2448 17@1600x1200 55@800x600	1x1, 2x2, 4x4	0.4ms~2000ms
LCMOS05100KPA LP605100A	MT9P001(C)	1/2.5"(5.7x4.28)	2.2x2.2	6.8@2592x1944 18@1280x960 55@640x480	1x1, 2x2, 4x4	0.294ms~2000ms
LCMOS03100KPA LP603100A	MT9T001(C)	1/2"(6.55x4.92)	3.2x3.2	11.5@2048x1536 32@1024x768 45@680x510	1x1, 2x2, 3x3	0.244ms~2000ms
LCMOS02000KPB LP602000B	Special(C)	1/2.6"(5.12x3.84)	3.2x3.2	16@1600x1200 40@800x600	1x1, 2x2	0.244ms~2000ms
LCMOS01300KPA LP601300A	MT9M111(C)	1/3"(4.60x3.7),	3.6x3.6	15@1280x1024 26@640x512 48@320x256	1x1, 2x2, 4x4	0.14ms~2000ms
LCMOS01200KPB LP601200B	AR0130(C)	1/3"(4.8x3.6)	3.75 x3.75	28@1280x960 30@640x480	1x1, 2x2	0.4ms~2000ms

C: Color

Other Specification for LCMOS Cameras

Spectral Range	380-650nm (with IR-cut Filter)
White Balance	ROI White Balance/ Manual Temp Tint Adjustment/NA for Monochromatic Sensor
Color Technique	Ultra-Fine™ Color Engine/NA for Monochromatic Sensor
Capture/Control API	Native C/C++, C#, DirectShow, Twain and Labview
Recording System	Still Picture and Movie
Cooling System*	Natural with High Performance Cooling Structure

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 5V over PC USB Port

Software Environment

Operating System	Microsoft® Windows® XP / Vista / 7 / 8 (32 & 64 bit) OSx(Mac OS X) Linux
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory:2GB or More
	USB Port:USB2.0 High-speed Port
	Display:17" or Larger
	CD-ROM

9 UCMOS Series USB2.0 Camera

9.1 UCMOS Basic Characteristic

- C-Mount camera has 25.4 mm or 1 inch diameter with 32 threads per inch;
- Scientific research grade camera with Aptina CMOS sensor;
- With hardware resolution among 0.35M to 14M;
- Integrated zinc aluminum alloy housing;
- USB2.0 interface ensuring high speed data transmission;
- Ultra-Fine^{TM} color engine with perfect color reproduction capability;
- With advanced video & image processing application ToupView;
- Custom programmable with SDK provided;

9.2 UCMOS Datasheet

Order Code	Sensor	Size(mm)	Pixel(μm)	FPS/Resolution	Binning	Exposure
UCMOS14000KPA TP614000A	MT9F002(C)	1/2.3"(6.451x4.603)	1.4x1.4	1.8@4096x3288 10@2048x1644 27@1024x822	1x1, 2x2, 4x4	0.4ms~2000ms
UCMOS10000KPA TP610000A	MT9J003(C)	1/2.3" (6.44x4.616)	1.67x1.67	1.9@3584x2748 8@1792x1374 27@896x684	1x1, 2x2, 4x4	0.4ms~2000ms
UCMOS09000KPB TP609000B	Special(C)	1/2.4"(5.825x4.369)	1.67x1.67	1.9@3488x2616 8@1744x1308 27@872x654	1x1, 2x2, 4x4	0.4ms~2000ms
UCMOS08000KPB TP608000B	Special(C)	1/2.5"(5.451x4.088)	1.67x1.67	1.9@3264x2448 8@1600x1200 27@800x600	1x1, 2x2, 4x4	0.4ms~2000ms
UCMOS05100KPA TP605100A	MT9P001(C)	1/2.5" (5.7x4.28)	2.2x2.2	5@2592x1944 18@1280x960 60@640x480	1x1, 2x2, 4x4	0.294ms~2000ms
UCMOS03100KPA TP603100A	MT9T001(C)	1/2" (6.55x4.92)	3.2x3.2	8@2048x1536 22@1024x768 43@680x510	1x1, 2x2, 3x3	0.244ms~2000ms
UCMOS02000KPB TP602000B	Special(C)	1/2.6"(5.12x3.84)	3.2x3.2	16@1600x1200 50@800x600	1x1, 2x2	0.128ms~2000ms
UCMOS01300KPA TP601300A	MT9M111(C)	1/3" (4.60x3.7),	3.6x3.6	15@1280x1024 26@640x512 50@320x256	1x1, 2x2, 4x4	0.14ms~2000ms
UCMOS01300KMA TM601300A	MT9M001(M)	1/2" (6.66x5.32)	5.2x5.2	20@1280x1024	1x1	0.14ms~500ms
UCMOS00350KPA TP600350A	MT9V011(C)	1/4" (3.58x2.69)	5.6x5.6	30@640x480 80@320x240	1x1, 2x2	0.111ms~192.465ms

C: Color; M: Monochrome;

Other Specification for UCMOS Camera

Spectral Range	380-650nm (with IR-cut Filter)
White Balance	ROI White Balance/ Manual Temp Tint Adjustment/NA for Monochromatic Sensor
Color Technique	Ultra-Fine™ Color Engine/NA for Monochromatic Sensor
Capture/Control API	Native C/C++, C#, DirectShow, Twain and Labview
Recording System	Still Picture and Movie
Cooling System*	Natural

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 5V over PC USB Port

Software Environment

Operating System	Microsoft® Windows® XP / Vista / 7 / 8 (32 & 64 bit) OSx(Mac OS X) Linux
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory:2GB or More
	USB Port:USB2.0 High-speed Port
	Display:17" or Larger
	CD-ROM

10 SCMOS Series USB2.0 Camera

10.1 SCMOS Characteristic

- Microscope eyepiece camera with 23.2 diameter and compact size;
- Easy to extend to C or CS- Mount camera with high quality lens(optional);
- High-quality camera with Aptina CMOS sensor;
- Auto white balance and auto-exposure; Brightness, contrast, chroma, and saturation can be adjusted;
- High-speed USB2.0 interface and high frame rate video display keep the screen smooth without interruption;
- With advanced video & image processing application ToupView;
- Custom programmable with SDK provided;

10.2 SCMOS Datasheet

Order Code	Sensor	Size(mm)	Pixel(μm)	FPS/Resolution	Binning	Exposure
SCMOS05000KPA TP505000A	Aptina(C)	1/2.5“ (5.70x4.28)	2.2x2.2	2@2592x1944 3@2048x1536 5@1600x1200 7.5@1280x1024	N/A	Auto
SCMOS03000KPA TP503000A	Aptina(C)	1/2.7“ (4.506x3.379)	2.2x2.2	3@2048x1536 5@1600x1200 7.5@1280x1024	N/A	Auto
SCMOS02000KPA TP502000A	Aptina(C)	1/3.2“ (4.73x3.52)	2.8x2.8	5@1600x1200 7.5@1280x1024 7.5@1280x960 20@800x600	N/A	Auto
SCMOS01300KPA TP501300A	Aptina(C)	1/3“ (4.60x3.70)	3.6x3.6	7.5@1280x1024 12.5@1024x768 12.5@800x600	N/A	Auto
SCMOS00350KPA TP500350A	Aptina(C)	1/4“ (3.58x2.69,)	5.6x5.6μm	30@640x480	N/A	Auto

C: Color; M: Monochrome;

Other Specification for SCMOS Camera

Spectral Range	380-650nm (with IR-cut Filter)
White Balance	Auto White Balance
Color Technique	N/A
Capture/Control API	Native C/C++, C#, DirectShow, Twain and Labview
Recording System	Still Picture and Movie
Cooling System*	Natural

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 5V over PC USB Port

Software Environment

Operating System	Microsoft® Windows® XP / Vista / 7 / 8 (32 & 64 bit) OSx(Mac OS X) Linux
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory:2GB or More
	USB Port:USB2.0 High-speed Port
	Display:17” or Larger
	CD-ROM

11 HCAM Series USB2.0 Microscope

11.1 HCAM Basic Characteristic

The intermediate-level ToupTek Handheld Digital Microscope is an easy to use, low power microscope. With powers of 10x to 200x, it's ideal for viewing stamps, coins, bugs, plants, rocks, skin, gems, circuit boards, and more. With the higher power magnifications, you can even view traditional microscope slides.

Best of all, you can capture your discoveries using the built-in 0.35MP，1.3MP or 2.0 MP camera. Press the shutter to save images and high resolution video directly to your PC. The LED illuminator ensures your specimens are clear and bright. An included metal stand allows for steady shots and comes in handy when viewing at higher powers, minimizing shaking and keeping your specimen in sharp focus.

For teens and adults alike, the ToupTek Handheld Digital Microscope is a fun, educational tool. It's well suited for hobbyists, quality control inspectors, medical professionals, and scientific researchers.

- USB-powered handheld digital microscope with 10x to 200x magnification;
- Built-in 0.35MP, 1.3MP or 2MP digital camera for capturing images and videos;
- 8 LED ring illuminator;
- Use the included Windows software to capture images and video of your discoveries. Measure your specimens with built-in measurement tool;
- Computer requirements: CD/DVD drive and USB 2.0 port. UVC plug-and-play with Windows 7/8, Vista, and XP (32/64 bit).

11.2 HCAM Hardware Characteristic

Order Code	Sensor	Size(mm)	Pixel(μm)	FPS/Resolution	Binning	Exposure
HCAM02000KPA HC502000A	MI2010(C)	1/3.2“	2.8x2.8	15@1600x1200 30@800x600	1x1	0.5ms~30ms
HCAM01300KPA HC501300A	MT9M112(C)	1/4“	2.8x2.8	15@1280x1024 30@640x512	1x1	0.5ms~30ms
HCAM00350KPA HC500350A	GC0308(C)	1/6.5“	3.4x3.4	30@640x480	1x1	0.5ms~30ms

C: Color; M: Monochrome;

Other Specification for HCAM Camera

Spectral Range	380-650nm (with IR-cut Filter)
White Balance	Auto White Balance
Color Technique	N/A
Capture/Control API	Native C/C++, C#, DirectShow, Twain and Labview
Recording System	Still Picture and Movie
Cooling System*	Natural
Illumination	LED Illumination
Holding Frame	Optional(M-SD-HM1, M-SD-HM2,M-SD-HM3)

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 5V over PC USB Port

Software Environment

Operating System	Microsoft® Windows® XP / Vista / 7 / 8 (32 & 64 bit) OSx(Mac OS X) Linux
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory:2GB or More
	USB Port:USB2.0 High-speed Port
	Display:17” or Larger
	CD-ROM

11.3 M-SD-HM1 Hand Held USB Microscope Stand

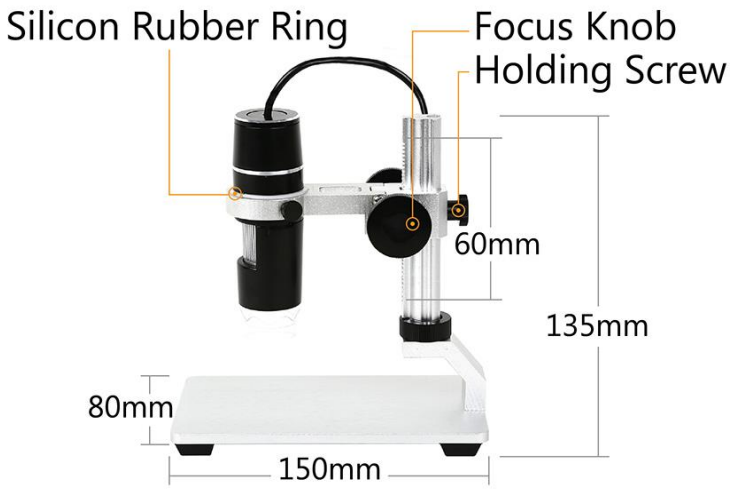
Pole stand (Metal) for handheld microscope with focus mount has the following basic characteristic

- Oxidized silver aluminum alloy;
- Stable to ensure capturing the clear video and image;
- Overall dimensions：150mmX80mmX147mm;
- Plate dimensions: 150mmX80mm;
- Pole coaxial focus with 51mm range;

11.4 M-SD-HM2 Hand Held USB Microscope Stand

The track stand (Metal) for handheld microscope with focus mount has the following basic characteristic

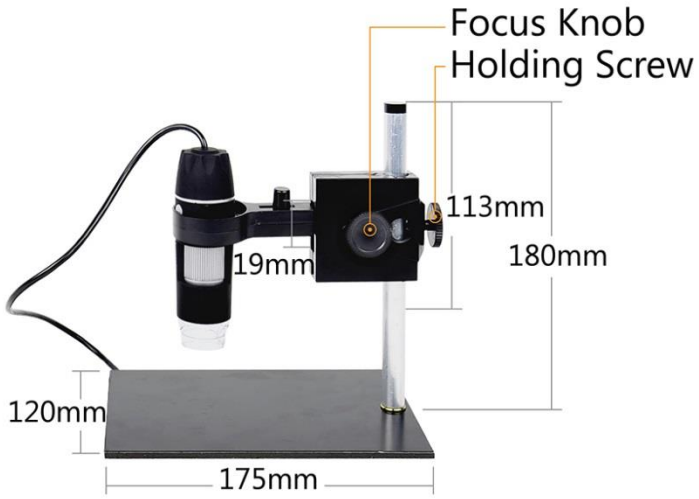
- Oxidized silver aluminum alloy;
- Focus knob inherited from the traditional microscope to focus at ease;
- Silicon rubber ring to protect the handheld microscope;
- Holding screw to hold the microscope;
- Stable to ensure capturing the clear video and image;
- Overall dimensions：150mmX80mmX135mm;
- Plate dimensions: 150mmX80mm;
- Rack focus with 60mm range;



11.5 M-SD-HM3 Hand Held USB Microscope Stand

Plastic stand (Plastic) for handheld microscope with focus mount has the following basic characteristic

- Plastic plate with aluminum alloy pole ;
- Focus knob inherited from the traditional microscope allow for precise focus;
- Bayonet mount to install the handheld microscope at ease;
- Holding screw to hold the microscope;
- Stable to ensure capturing video and image;
- Overall dimensions：175mmX120mmX180mm;
- Plate dimensions: 175mmX120mm;
- Focus range: 113mm;
- Fine focus range 19mm



12 ICMOS Series USB2.0 Camera

12.1 ICMOS Basic Characteristic

- C-Mount camera has 25.4 mm or 1 inch diameter with 32 threads per inch;
- Aptina or OnSemi CMOS Sensor;
- Dimensions: 29x29x29 mm excluding lens holder, without optics (metal case);
- 8-pin Hirose HR25-7TR-8PA GPIO connector for trigger, strobe (Optional);
- USB 2.0 interface with screw locks for camera control, data, and power;
- Ultra-FineTM color engine with perfect color reproduction capability;
- Variety of applications in industrial and non-industrial imaging;
- Custom programmable with SDK provided;

12.2 ICMOS Datasheet

Order Code	Sensor	Size(mm)	Pixel(μm)	FPS/Resolution	Binning	Exposure(ms)
ICMOS03100KPA **IP603100A**	MT9T001(C)	1/2“ (6.55x4.92)	3.2x3.2	12@2048x1536 43@1024x768 83@680x510	1x1	0.128ms~2000ms,
ICMOS01300KMA **IM601300A**	MT9M001(M)	1/2“ (6.66x5.32),	5.2x5.2	30@1280x1024	1x1	0.64ms~1035.62ms,

Other Specification for ICMOS Camera	
Spectral Range	380-650nm (with IR-cut Filter)
White Balance	ROI White Balance/ Manual Temp Tint Adjustment/NA for Monochromatic Sensor
Color Technique	Ultra-Fine™ Color Engine/NA for Monochromatic Sensor
Capture/Control API	Native C/C++, C#, DirectShow, Twain and Labview
Recording System	Still Picture and Movie
Cooling System*	Natural
Cable Connection	**Include Locking Screws**
User IO	**IO with Optocoupler Isolation(Trigger and Flash)**

Operating Modes	
Continuous Capture Mode	Video Mode
Single Capture Mode	**Hard Trigger or Soft Trigger**

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 5V over PC USB Port

Software Environment	
Operating System	Microsoft® Windows® XP / Vista / 7 / 8 (32 & 64 bit) OSx(Mac OS X) Linux
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory:2GB or More
	USB Port:USB2.0 High-speed Port
	Display:17” or Larger
	CD-ROM

13 XCAM Series VGA or HDMI Camera

13.1 XCAM Basic Characteristic

- Through standard VGA 15pin or HDMI interface to stream the video to displayer or HDTV. Easy connecting to other equipment on the production line with the C-mount optical interface.
- High-resolution and high frame rate, perfect color reproduction, highly integrated and compact, low failure rate and stable performance.
- 1280 × 720 (720P) resolution to match the current high-definition displayer on the market.
- Supporting various OSD cursors which can be toggled On/Off (functions shift as users press the button). The OSDs including: scale, double horizontal line, double vertical line, double cross line, Tri-cross line.
- The other function buttons including automatic white balance and exposure on/off (AEWB), saving images to SD card (SAVE), video stream and freeze on/off (FREEZE), remote image snapshot controller to reduce the vibration blur (REMOTE).
- For the above characteristic and technical features, which utmost meet various applications and widely apply to industrial inspection, education and research, materials analysis, precision measurement, medical analyses etc.

13.2 XCAM Datasheet

Order Code	Sensor	Size(mm)	Pixel(μm)	FPS/Resolution	Binning	Exposure(ms)
XCAM0720PHA **XP00720HA**	MT9P031 (C)	1/2.5“ (5.70 x 4.28)	2.2x2.2	30@1080x720	1x1	0.21ms~33ms,

Interface & Button Functions

RED	Cursor ON/OFF
BLUE	Save Image to SD Card
YELLOW	AEWB ON/OFF
WHITE	Video Stream/Freeze

1X HDMI Output Port
1X SD Card Slot
1X Power Input Slot
1X Remote Switch Slot

Overall Dmiensions	
Width X Depth X Height	68 mm (2.67”) X 68 mm (2.67”) X 92mm (3.62”)
Shipping Weight	0.25 kg (0.55 lbs)
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 5V/1A Adaptor
Optional Accessories	
Lens	C-mount Lens
Cable	HDMI Cable
Memory Card	SD Card
Remote Image Save Switch	2.5mm Headphone Jack Remote Image Save Switch

14 WCAM Series WIFI Camera

14.1 Basic Characteristic

- C-Mount camera has 25.4 mm or 1 inch diameter with 32 threads per inch;
- Scientific research grade camera with Aptina CMOS sensor;
- Sends H.264 encodec high-resolution images from a microscope to WiFi-enabled smartphones, computers, and tablets with iOS, Android, and Windows operating systems;
- Streams images to several devices simultaneously;
- Integrated zinc aluminum alloy housing;
- Ultra-Fine^{TM} color engine with perfect color reproduction capability;
- With advanced video & image processing application ToupView(only support simple video viewing capturing for IOS, android system);
- Custom programmable with SDK providedI(Windows OS);

14.2 WCAM Datasheet

Order Code	Sensor	Size(mm)	Pixel(μm)	FPS/Resolution	Binning	Exposure(ms)
WCAM1080PA WP601080A	MT9P001 (C)	1/2.5“ (5.70 x 4.28)	2.2x2.2	15@1920x1080	2x2	0.21ms~200ms,
WCAM0720PA WP600720A	MT9P001 (C)	1/2.5“ (5.70 x 4.28)	2.2x2.2	30@1280x720	2x2	0.21ms~200ms,
WCAM0720PB WP600720B	MT9P001 (C)	1/2.5“ (5.70 x 4.28))	2.2x2.2	10@1280x720	2x2	Auto Exposure
WCAM0300KPA WP600300KA	MT9V011 (C)	1/4“ (3.58 x 2.69)	5.6x5.6	25@640x480	1x1	Auto Exposure

Other Specification for WCAM Camera	
Spectral Range	380-650nm (with IR-cut Filter)
White Balance	ROI White Balance/ Manual Temp Tint Adjustment/NA for Monochromatic Sensor
Color Technique	Ultra-Fine™ Color Engine/NA for Monochromatic Sensor
Capture/Control API	Native C/C++, C#, DirectShow, Twain and Labview
Recording System	Still Picture and Movie
Cooling System*	Natural

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 Charger or over PC USB Port

Software Environment	
Operating System	Microsoft® Windows® XP / Vista / 7 / 8 (32 & 64 bit) **IOS IPAD or IPhone, Android PAD and Phone**
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory:2GB or More
	WIFI Adaptor with DHCP Enabled
	Display:17” or Larger
	CD-ROM
PAD	**IPAD or PAD with Android System**
Mobile Phone	**IPhone or Smart Phone with Android System**

15 LHCCD Series Linear CCD Camera

15.1 Basic Characteristic

- Linear USB2.0 CCD camera with C-mount, f-mount, and M72x0.75 photography standards;
- 2048~3648 pixel silicon linear CCD array;
- 16-Bit A/D converter for high intensity resolution;
- External trigger capability;
- Optical integration time adjustable from 2 to 4000ms;
- Board-level camera, ideal for OEM applications;
- No external power supply required;
- High scan rate (up to 120 scans/second);
- SDK for user applications;
- Demo graphical user interface;
- Compatible to Windows XP, Vista and 7/8(32 or 64 bit);

15.2 Datasheet

Order Code	Sensor	Size(mm)	Pixel(μm)	FPS/Resolution	Binning	Exposure(ms)
LHCCD00511	ILX511 (M)	28mm	14x200	475@2048	NA	2ms~4000ms,
LHCCD00554	ILX554 (M)	28mm	14x56	475@2048	NA	2ms~4000ms
LHCCD01304	TCD1304 (M)	29.184mm	8x200	125@3648	NA	3.8ms~4000ms

OTHER HARDWARE CONFIGURATION	
Capture/Control API	SDK and Example Code
Capture Mode	Single Camera Multiple Instance and Multiple Cameras Supported
Lens Mount(Optional)	M42
Host Interface	USB2.0
SOFTWARE ENVIRONMENT	
Operating System	Microsoft® Windows® XP / Vista / 7 /8 (32 & 64 Bit)
PC Requirements	CPU: Equal to Intel Core 2 2.8GHz or Higher
	Memory:2GB or More
	USB Port:USB2.0 High-speed Port
OPERATING ENVIRONMENT	
Operating Temperature	-30~70
Storage Temperature	-40~85
Operating Humidity	30~80%RH
Storage Humidity	10~60%RH
Power Supply	DC 5V Over USB Port

16 Eyepiece Tube to C-Mount Adaptor

16.1 ToupTek Adjustable Microscope Eyepiece Adaptor

AMA Specifications

Article Code	Picture	Model	Description	Bar Code
108001		AMA037	1.Available Size for 18 mm Field 18X0.37 2.Fit to 1/4”~1/3” Size Sensor 3.0.37XMagnification 4.Manually Focusable 5.Parfocal with the Eyepiece 6.C-Mount to Dia.23.2mm Eyepiece Tube	108001
108002		AMA050	1.Available Size for 18 mm Field 18X0.50 2.Fit to 1/2”~2/3” Size Sensor 3.0.50XMagnification 4.Manually Focusable 5.Parfocal with the Eyepiece 6.C-Mount to Dia.23.2mm Eyepiece Tube	108002
108003		AMA075	1.Available Size for 18 mm Field 18X0.75 2.Fit to 1/1.8”~1” Size Sensor 3.0.75XMagnification 4.Manually Focusable 5.Parfocal with the Eyepiece 6.C-Mount to Dia.23.2mm Eyepiece Tube	108003

*To cover the field, the sensor size should be smaller than the available size. ToupTek’s experts will help you to select the correct adaptor for your ordered microscope camera. What you need to do is to select the right camera model.

16.2 ToupTek Fixed Microscope Eyepiece Adaptor

FMA Specifications

Article Code	Picture	Model	Description	Bar Code
108005		FMA037	1.Available Size for 18 mm Field 18X0.37 2.Fit to 1/4”~1/3” Size Sensor 3.0.37XMagnification 4.C-Mount to Dia.23.2mm Eyepiece Tube	108005
108006		FMA050	1.Available Size for 18 mm Field 18X0.50 2.Fit to 1/2”~2/3” Size Sensor 3.0.50XMagnification 4.C-Mount to Dia.23.2mm Eyepiece Tube	108006
108007		FMA075	1.Available Size for 18 mm Field 18X0.75 2.Fit to 1/1.8”~1” Size Sensor 3.0.75XMagnification 4.C-Mount to Dia.23.2mm Eyepiece Tube	108007

*To cover the field, the sensor size should be smaller than the available size. ToupTek’s experts will help you to select the correct adaptor for your ordered microscope camera. What you need to do is to select the right camera model.

16.3 ToupTek Adjustable Telescope Eyepiece Adaptor

ATA Specifications

Article Code	Picture	Model	Description	Bar Code
108008		ATA037	1.Fit to 1/4” ~ 1/3” Size Sensor 2.0.37XMagnification 3.Manually Focusable 4.Parfocal with the Eyepiece 5.C-Mount to Dia.31.75mm Eyepiece Tube	108008
108009		ATA050	1.Fit to 1/2” ~ 2/3” Size Sensor 2.0.50XMagnification 3.Manually Focusable 4.Parfocal with the Eyepiece 5.C-Mount to Dia.31.75mm Eyepiece Tube	108009
108010		ATA075	1.Fit to 1/1.8” ~ 1” Size Sensor 2.0.75XMagnification 3.Manually Focusable 4.Parfocal with the Eyepiece 5.C-Mount to Dia.31.75mm Eyepiece Tube	108010

*To cover the field, the sensor size should be smaller than the available size. ToupTek’s experts will help you to select the correct adaptor for your ordered microscope camera. What you need to do is to select the right camera model.

16.4 ToupTek Fixed Telescope Eyepiece Adaptor

FTA Specifications

Article Code	Picture	Model	Description	Bar Code
108011		FTA037	1.Fit to 1/4” ~ 1/3” Size Sensor 2.0.37XMagnification 3.C-Mount to Dia.31.75mm Eyepiece Tube	108011
108012		FTA050	1.Fit to 1/2” ~ 2/3” Size Sensor 2.0.50XMagnification 3.C-Mount to Dia.31.75mm Eyepiece Tube	108012
108013		FTA075	1.Fit to 1/1.8” ~ 1” Size Sensor 2.0.75XMagnification 3.C-Mount to Dia.31.75mm Eyepiece Tube	108013

*To cover the field, the sensor size should be smaller than the available size. ToupTek’s experts will help you to select the correct adaptor for your ordered telescope camera. What you need to do is to select the right camera model.

17 Microscope Phototube to C-Mount Adaptor

17.1 Olympus TV Adaptor

17.1.1 Characteristic

- Convert the Olympus trinocular microscope phototube/head/port (have standard 35 mm outer diameter for the insertion end to phototube) to traditional C-Mount type(25.4 mm or 1 inch diameter with 32 threads per inch);
- With different built-in reduction lens (1X, 0.63X, 0.5X, 0.35X) for achieving better field of view from microscope trinocular head(suitable for 1", 2/3", 1/1.8", 1/2", 1/2.5", 1/3" or 1/4" inch CCD or CMOS sensor chips);
- Can be installed in UIS trinocular tube such as : BX series, BX2 series, CX series, CX2 series, MX series;
- Build of material: anodized aluminum;
- Telecentric optics with low light deficiency;
- Parfocal with different microscope objective lenses;
- Diffraction limited MTF;
- Aperture totally coupled with UIS microscope objective's exit pupil;

17.1.2 Specifications

Model	U-TV1X-2/U-CAMD3	U-TV0.63XC	U-TV0.5XC-3	U-TV0.35XC-2
Photo				
Magnification	1X	0.63X	0.5X	0.35X
Sensor Size	1", 2/3"	2/3",1/1.8",1/2"	1/1.8",1/2",1/2.5"	1/2.5",1/3",1/4"
Microscope	Specially designed for Olympus CX，BX，MX，STM，SZX，IX，GX(GX41) series microscopes			

17.2 HUVITZ TV Adaptor

17.2.1 Characteristic

- Convert the HUVITZ trinocular microscope phototube/head/port (have standard 35 mm outer diameter for the insertion end to phototube) to traditional C-Mount type(25.4 mm or 1 inch diameter with 32 threads per inch);
- With different built-in reduction lens (1X, 0.63X, 0.5X, 0.35X) for achieving better field of view from microscope trinocular head(suitable for 1", 2/3", 1/1.8", 1/2", 1/2.5", 1/3" or 1/4" inch CCD or CMOS sensor chips);
- Can be installed in UIS trinocular tube such as : HRM series, HSZ series microscope;
- Build of material: anodized aluminum;
- Telecentric optics with low light deficiency;
- Parfocal with different microscope objective lenses;
- Diffraction limited MTF;
- Aperture totally coupled with UIS microscope objective's exit pupil;

17.2.2 Specifications

Model	HSZ-CP1X	HSZ-CP0.63X	HSZ-CP0.5X	HSZ-CP0.35X
Photo				
Magnification	1X	0.63X	0.5X	0.35X
Sensor Size	1", 2/3"	2/3",1/1.8",1/2"	1/1.8",1/2",1/2.5"	1/2.5",1/3",1/4"
Microscope	Specially designed for HUVITZ HRM series, HSZ series microscopes			

17.3 LEICA TV Adaptor

17.3.1 Characteristic

- Convert the LEICA trinocular microscope phototube/head/port (have standard 35 mm outer diameter for the insertion end to phototube) to traditional C-Mount type(25.4 mm or 1 inch diameter with 32 threads per inch);
- With different built-in reduction lens (1X, 0.7X, 0.55X, 0.35X) for achieving better field of view from microscope trinocular head(suitable for 1”, 2/3”, 1/1.8”, 1/2”, 1/2.5”, 1/3” or 1/4” inch CCD or CMOS sensor chips);
- Can be installed in UIS trinocular tube such as: specially designed for LEICA DM series biology microscopes and industrial microscopes;
- Build of material: stainless steel material;
- Telecentric optics with low light deficiency;
- Parfocal with different microscope objective lenses;
- Diffraction limited MTF;
- Aperture totally coupled with LEICA UIS microscope objective’s exit pupil;

17.3.2 Specifications

Model	11541510	11541543	11541544	11541512
Photo				
Magnification	1X	0.7X	0.55X	0.35X
Sensor Size	1”, 2/3”	2/3”,1/1.8”,1/2”	1/1.8”,1/2”,1/2.5”	1/2.5”,1/3”,1/4”
Microscope	Specially designed for LEICA DM series biology microscopes and industrial microscopes			

17.4 NIKON TV Adaptor

17.4.1 Characteristic

- Convert the NIKON trinocular microscope phototube/head/port (have standard 38 mm(1.50 inch) outer diameter for the insertion end to phototube) to traditional C-Mount type(25.4 mm or 1 inch diameter with 32 threads per inch);
- With different built-in reduction lens (1X, 0.70X, 0.55X, 0.35X) for achieving better field of view from microscope trinocular head(suitable for 1", 2/3", 1/1.8", 1/2", 1/2.5", 1/3" or 1/4" inch CCD or CMOS sensor chips);
- Can be installed in UIS trinocular tube such as : NIKON E100, E200, 50i, 55i, 80i, 90i, Ni series, Ti Series, SMZ800, SMZ1000, SMZ15000 biology microscopes and industrial microscopes;
- Build of material: stainless steel material for the C-Mount end and spray-painted aluminum for the phototube end ;
- Telecentric optics with low light deficiency;
- Parfocal with different microscope objective lenses;
- Diffraction limited MTF;
- Aperture totally coupled with UIS microscope objective's exit pupil;

The Adaptor works for the following microscope series: NIKON microscopes UPRIGHT: Alphaphot-2, Eclipse series (requires YT-tube 92306), Labophot-2, Optiphot-2 Optiphot 100S, 150, 200, 300 Stereo: SMZ-10A, SMZ-U, SMZ-1000, SMZ-1500 METALLURGICAL: EPIPHOT 300/200 MEASURING: MM-40, MM-60 INVERTED: Diaphot 300/200 TS100-F TE2000

Model	MQD42000	MQD42070	MQD42055	MQD42035
	MBB42000	MBB42070	MBB42055	MBB42035
Photo				
Magnification	1X	0.7X	0.55X	0.35X
Sensor Size	1", 2/3"	2/3",1/1.8",1/2"	1/1.8",1/2",1/2.5"	1/2.5",1/3",1/4"
Microscope	Specially designed for NIKON E100,E200,50i,55i,80i,90i, Ni series, Ti Series, SMZ800,SMZ1000, SMZ15000 biology microscopes and industrial microscopes			

17.5 Labomed TV Adaptor

17.5.1 Characteristic

- Convert the Labomed trinocular microscope phototube/head/port (have standard 35 mm outer diameter for the insertion end to phototube) to traditional C-Mount type(25.4 mm or 1 inch diameter with 32 threads per inch);
- With different built-in reduction lens (1X, 0.63X, 0.5X, 0.35X) for achieving better field of view from microscope trinocular head(suitable for 1", 2/3", 1/1.8", 1/2", 1/2.5", 1/3" or 1/4" inch CCD or CMOS sensor chips);
- Can be installed in UIS trinocular tube such as : LB series microscope;
- Build of material: anodized aluminum;
- Telecentric optics with low light deficiency;
- Parfocal with different microscope objective lenses;
- Diffraction limited MTF;
- Aperture totally coupled with UIS microscope objective's exit pupil;

17.5.2 Specifications

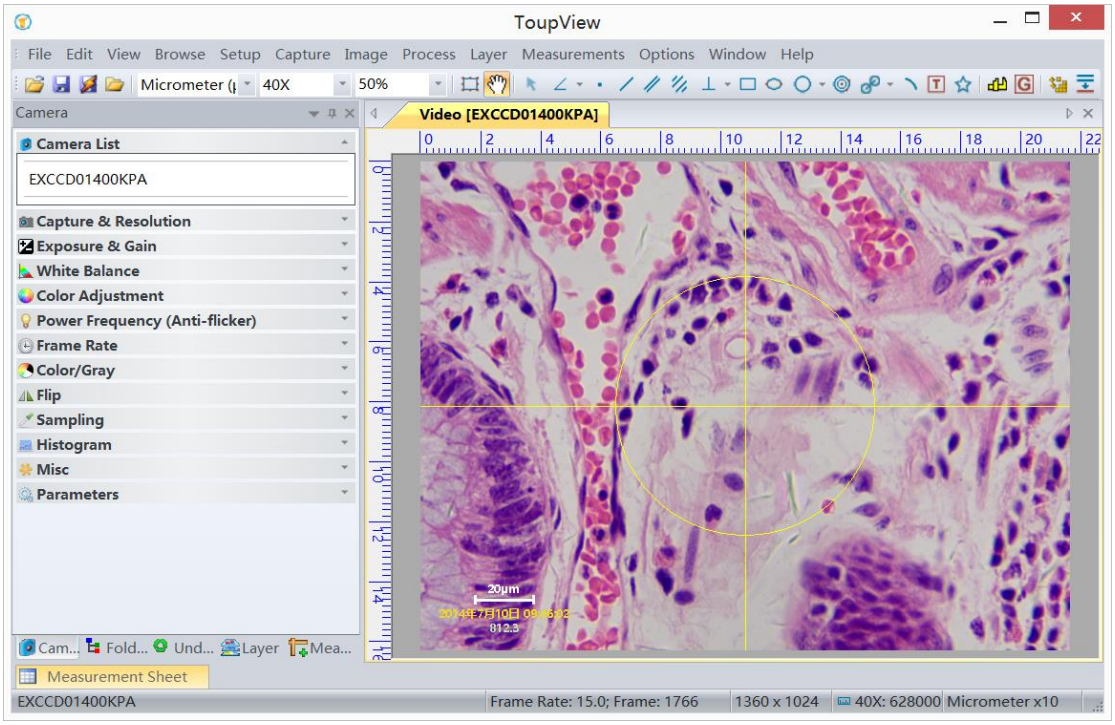
Model	LB1.0X	LB0.75X	LB0.65X	LB0.50X	LB0.35X
Photo					
Magnification	1X	0.75X	0.65X	0.5X	0.35X
Sensor Size	1", 2/3"	2/3",1/1.8",1/2"	1/1.8",1/2",1/2.5"		1/2.5",1/3",1/4"
Microscope		Specially designed for Labomed LB series microscopes			

18 ToupView for ToupCam Cameras

ToupView is a professional software integrated with camera control, image capture & process, image browse, image measurement and analysis. ToupView is born with the following features:

18.1 User-friendly UI design

- Well-arranged menus and toolbars ensure quick operating;
- The unique design of 5 sidebars -- Camera, Folders, Undo/Redo, Layer, Measurement are orderly classified;
- Convenient operating method (Double click or right-click context menu) as much as possible;
- Detailed help manual;



18.2 Professional Camera Control Panel

Exposure & Gain	Auto exposure (exposure target preset) and manual exposure (exposure time can be inputted manually); Up to 5 times gain;
White Balance	Advanced single-click intelligent white balance setting, temperature and tint can be manually adjusted;
Color Adjustment	Hue, saturation, brightness, contrast, gamma initialization adjustment;
Frame Rate Control	Adjustment of frame rate available for different computer configurations;
Power Frequency Setting(Anti-filcker)	Natural light/DC, AC 50 HZ, AC60 HZ switch function thoroughly eliminates video flicker;
Flip	Check the “horizontal” or “vertical” option to correct the sample direction;
Skip and bin sampling	Bin mode can obtain low noise video stream; Skip mode obtains sharper and smoother video stream. Support video stream histogram extension, Negative and positive switching, Gray calibration, Clarity factor for focusing etc.
Parameters	Load, save, overwrite, import, export self-defined parameters of camera control panel (including calibration information, exposure and color setting information);

18.3 Practical functions with good results

Video functions	Various professional functions : Video broadcast; Time lapse capture; Video record; Video watermark; Move watermark; Rotate watermark; Video stream grid; Video measurement; Video calibration, Gray calibration; Video EDF; Image stitch; Video scale bar, date and etc.;
Image Processing and Enhancement	Control and adjust image by contrast, denoise, all kinds of filtering algorithm and mathematical morphology algorithm; image rotate, image scale, image print;
2D Measurement	Easy video or image calibration. Various video and image measurement methods like area, perimeter, angle etc.. Measurement results can be hierarchical controlled according to characteristics or preferences;
Image Stitching	Image stitching can automatically combine a sequence of relevant images into a perfect larger one. No requirement on the image order；Support video window, image window, browse window image stitching operation.
EDF(Extended Depth of Focus)	Aimed at generating a clearer image by combining a sequence of previously captured multi-focus images; Support video window, image window, browse window EDF operation. Provided with maximum contrast, weighted average, FFDSSD algorithms to meet with most applications. Consider image shift, rotation and scale in the EDF process to guarantee EDF accuracy & speed；
Professional Segmentation & Count function	Integrate the advanced 6 image segmentation and particle counting algorithm (Watershed (W), OTSU Dark, OTSU Bright, RGB Histogram, HSV Histogram and Color Cube). Manual segmentation function (Split objects) ensures the success of a complete segmentation. The count result can be exported to Microsoft Excel for further analysis;
Image Stacking	Image stacking adopts advanced image matching technology. With the recorded video, regardless of shifting, rotation, scaling, the high fidelity image can be stacked to decrease the image noise.
Color Composite	Color composite adds appropriate pseudo color to monochrome fluorescence images. Fluorescence probe and color can be chosen from the pre-defined database. Dye database can also be easily created for special fluorescence probe.

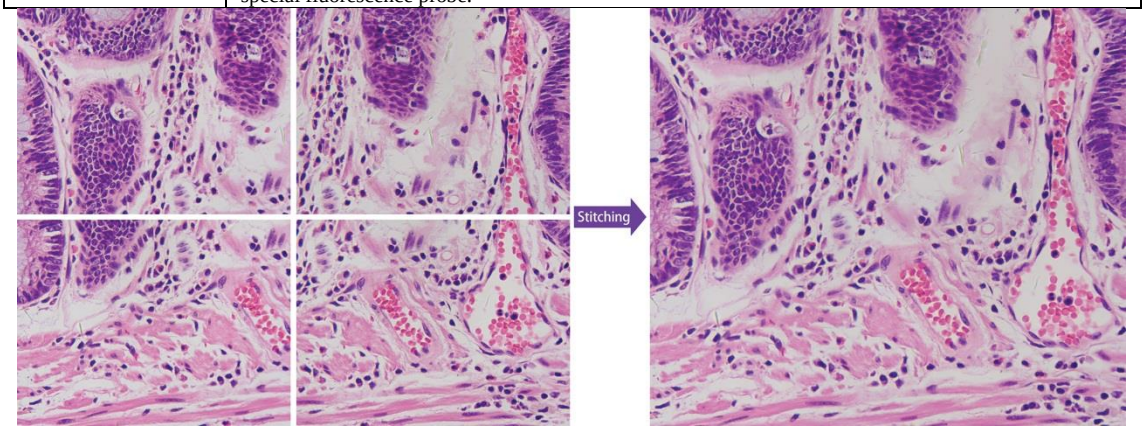


Image Stitching

EDF(Extended Depth of Focus)

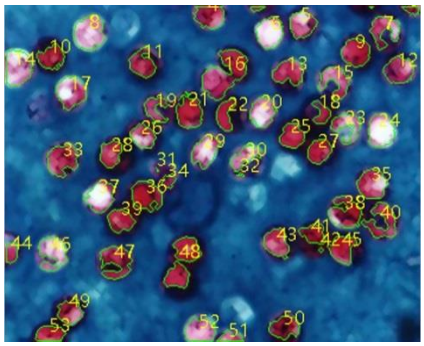


Image Segmentation & Count

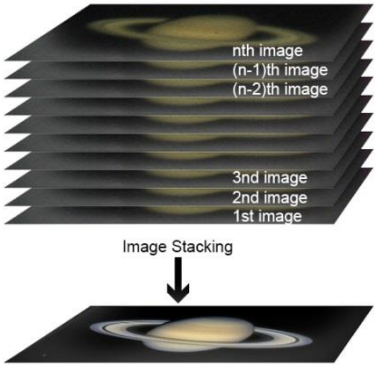
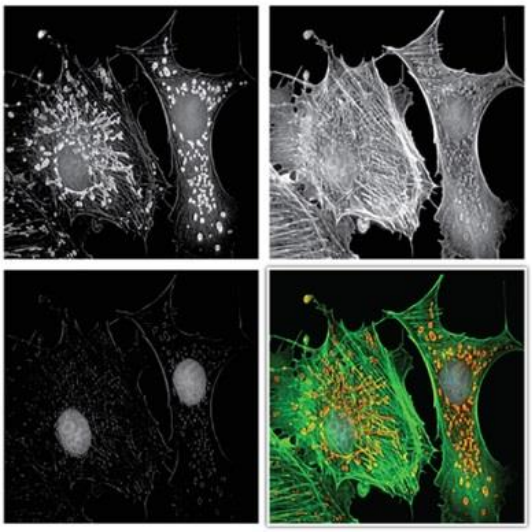


Image Stacking



18.4 Powerful compatibility

Video Interface	Support Twain, DirectShow, Labview, SDK Package（Native C++、C#）
Operating System	Compatible with Microsoft® Windows® XP / Vista / 7 / 8 (32 & 64 bit), Mac OSX, Linux
Language Support	Unlimited language support, currently available in Simplified Chinese,Traditional Chinese, English, Russian, German, French, Polish and Turkish

18.5 Hardware Requirement

PC Requirements	CPU: Intel Core 2 2.8GHz or Higher
	Memory:2GB or more
	USB port:USB2.0 or USB3.0 port
	Display:17” or Larger
	CD-ROM

19 Micro-spectrometer

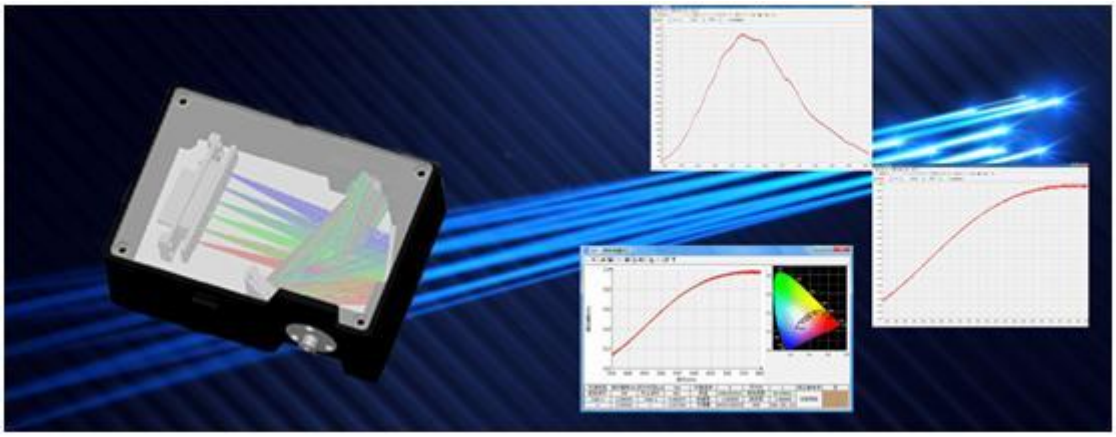
ToupTek's spectrometer is applicable for spectral detection within the wavelength range between 200nm and 1100nm.

Due to their high stability and performance, these portable instruments can greatly satisfy the increasing need for their use in scientific research, industrial manufacture, and online detections and so on. The ToupSpm is capable of measuring:

- Spectral power distribution
- Absorbance, transmission
- Reflection
- Relative irradiance
- Chromaticity coordinates
- Color temperature
- Color rendering index
- Color tolerance
- Color difference
- Color purity
- Main wavelength
- Luminous flux
- Luminance
- Irradiance power
- Luminous efficiency

etc. for various kinds of samples, light sources and display devices. In addition, they can be utilized to achieve the photochromic analysis of:

- Florescence lamps
- High pressure gas discharge light sources
- Halogen-tungsten lamps, medical light sources
- Semi-conductor lighting devices
- Display devices such as CRT, LCD, PDP, ELD, and VFD



ToupSpm can offer the best solutions for spectral detections. With different system configurations and sampling accessories, ToupSpm can achieve high spectral resolution up to 0.2nm, stable wide and narrow line spectrums with different optical interfaces. Furthermore, with the easy-to-use basic operating software and high efficient SDK, users can easily produce various

kinds of spectral detection systems customized to meet their own goals.

19.1 USB2000A-ILX511(P/N: TS300511)

Mechanical Parameters

Dimension(mm)	95x68.5x36
Weight (g)	210

Detector Specifications

Detector	Sony ILX511 2048 linear CCD array
Wavelength Response Range(nm)	330-1100
Active Pixels	2048
Pixel Size(um)	14x200
Saturation Exposure(lx.s)	0.004
Saturation Output Voltage	0.8V
A/D Resolution	16bit
Dark Signal Voltage(mv)	3
Sensitivity Non-uniformity	1%
Sensitivity(V/lx.s)	200

Optical Bench

Optical System	f/4, asymmetrical crossed Czerny-Turner
Focal Length(mm)	45(Input); 70(Output)
Entrance Aperture(um)	5,10,15,20,50 etc. width slits or fiber(customizable)
Grating	Various kind of scoring grating or holographic grating with different grating constants and flare wavelength(customizable)
Cylindrical Lens	Optional
Optical Filter	Band pass or long pass filters to eliminate secondary spectrum
Fiber and Fiber Connection	NA 0.22,SMA905(customizable)

Spectroscopic

Wavelength Range	Depends on optical grating
Optical Resolution (nm)	0.2-10 FWHM (Depends on grating constant, width of slit and detector model)
SNR	300:1 (Full signal)
Wavelength Tolerance (nm)	About ±0.2
Dark noise (RMS counts)	50
Integration Time	2ms-4s
Dynamic Range	267
Stray light	<0.05% at 550nm

Electronics

Power Consumption	300 mAx5 V DC
Data Transfer Speed	Full spectrum into memory every 2.4 ms at USB 2.0

Computer

Operating System	Windows / XP / Vista/7 /8 (32 and 64)
Interface	USB 2.0 (480Mbps), compatible with USB 1.1

Pre-defined System Components

Name	Customizable Parts	Remark
Slit	Width (um)	10, 20, 50, 100 .etc
Grating	Lines Per Unit (L/mm)	300, 600, 1200, 1800
	Wavelength Range(nm)	200-1100 (User defined, about 650 range with 600 lines/mm grating)
Fiber	Core Diameter (um)	9, 50, 200, 400, 600 .etc
	Wavelength Range(nm)	200-1100
	Outer Protection Layer	Normal or enhanced jacketing
	Interface Type	SMA 905 (standard) or FC, ST .etc

Detector	Model	Sony ILX511
Cylindrical Lens	Optional	Enhance system's light gathering ability

Optional Components

Name	Remark
Light Source	Used for wide range spectral measurements or wavelength calibration: for example halogen tungsten, xenon or argon light sources
Integration Sphere	Used to acquire uniform light
Reflection Measurement Accessory	Components used for reflection spectrum measurements: for example standard reflection board or specialized clamp
Transmission Measurement Accessory	Components used for transmission spectrum measurement: for example sample holder and various kinds of cuvettes

Packing List

Name	Amount
ToupTek Microspectrometer	USB2000A
Fiber with SMA 905 Interface	1
Mini USB Data Transfer Wire	1
CD of Software and SDK	1

19.2 USB2000B-ILX554(P/N: TS300554)

Mechanical Parameters

Dimensions (mm)	95×68.5×36
Weight (g)	210

Detector Specification

Detector	Sony ILX554 2048 linear CCD array
Wavelength Response Range (nm)	330-1000
Active Pixels	2048
Pixel size (μm)	14×56
Saturation Exposure(lx s)	0.004
Saturation Output Voltage	1V
A/D Resolution	16 bit
Dark Signal Voltage(mv)	3
Sensitivity Non-uniformity	1%
Sensitivity (V/lx.s)	240

Optical Bench

Optical System	f/4, asymmetrical crossed Czerny-Turner
Focal length (mm)	45 (Input); 70 (Output)
Entrance Aperture (μm)	5, 10, 15, 20, 50 etc. width slits or fiber (customizable)
Grating	Various kinds of scoring grating or holographic grating with different grating constants and flare wavelengths (customizable)
Cylindrical Lens	optional
Optical Filter	Band pass or long pass filters to eliminate secondary spectrum
Fiber and Fiber Connection	NA 0.22, SMA905 (customizable)

Spectroscopic

Wavelength Range	Depends on optical grating
Optical Resolution (nm)	0.2-10 FWHM (Depends on grating constant, width of slit and detector model)
SNR	300:1 (Full signal)
Wavelength Tolerance (nm)	About ±0.2
Dark noise (RMS counts)	50
Integration Time	2ms-4s
Dynamic Range	333
Stray Light	<0.05% at 550nm

Electronics

Power Consumption	300 mA×5 V DC
Data Transfer Speed	Full spectrum into memory every 2.4 ms at USB 2.0

Computer

Operating System	Windows /XP/Vista/7 /8(32 and 64)
Interface	USB 2.0 (480Mbps), compatible with USB 1.1

Pre-defined System Components

Name	Customizable Parts	Remark
Slit	Width (μm)	10, 20, 50, 100 .etc
Grating	Lines Per Unit (L/mm)	300, 600, 1200, 1800
	Wavelength Range(nm)	200-1100 (User defined, about 650 range with 600 lines/mm grating)
Fiber	Core Diameter (μm)	9, 50, 200, 400, 600 .etc
	Wavelength Range(nm)	200-1100
	Outer Protection Layer	Normal or enhanced jacketing
	Interface Type	SMA 905 (standard) or FC, ST .etc

Detector	Model	Sony ILX554
Cylindrical Lens	Optional	Enhance system's light gathering ability

Optional Components

Name	Remark
Light Source	Used for wide range spectral measurements or wavelength calibration: for example halogen tungsten, xenon or argon light sources
Integration Sphere	Used to acquire uniform light
Reflection Measurement Accessory	Components used for reflection spectrum measurements: for example standard reflection board or specialized clamp
Transmission Measurement Accessory	Components used for transmission spectrum measurement: for example sample holder and various kinds of cuvettes

Packing List

Name	Amount
ToupTek Micro-spectrometer	USB2000B
Fiber with SMA 905 Interface	1
Mini USB Data Transfer Wire	1
CD of Software and SDK	1

19.3 USB4000A-TCD1304(P/N: TS301304)

Mechanical Parameters

Dimensions (mm)	95×68.5×36
Weight (g)	210

Detector Specification

Detector	TCD1304AP linear CCD array
Wavelength Response Range (nm)	330-1100
Active Pixels	3648
Pixel size (μm)	8×200
Saturation Exposure（lx s）	0.004
Saturation Output Voltage	600mv
A/D Resolution	16 bit
Dark Signal Voltage（mv）	2
Photo Response non-uniformity	1%(MAX)
Sensitivity (V/lx s)	160

Optical Bench

Optical System	F/4, asymmetrical crossed Czerny-Turner
Focal length (mm)	50 (Input); 65 (Output)
Entrance Aperture (μm)	5, 10, 15, 20, 50 .etc width slits or fiber (customizable)
Grating	Various kinds of scoring grating or holographic grating with different grating constants and flare wavelengths (customizable)
Cylindrical Lens	optional
Optical Filter	Band pass or long pass filters to eliminate secondary spectrum
Fiber and Fiber Connection	NA 0.22, SMA905 (customizable)

Spectroscopic

Wavelength Range	Depends on optical grating
Optical Resolution (nm)	0.2-10 FWHM (Depends on grating constant, width of slit and detector model)
SNR	300:1 (Full signal)
Wavelength Tolerance (nm)	About ±0.2
Dark noise (RMS counts)	50
Integration Time	3.8ms-4s
Dynamic Range	300
Stray light	<0.05% at 550nm

Electronics

Power Consumption	300 mA×5 V DC
Data Transfer Speed	Full spectrum into memory every 3.6ms at USB 2.0

Computer

Operating System	Windows /XP/Vista/7 /8(32 and 64)
Interface	USB 2.0 (480Mbps), compatible with USB 1.1

Pre-defined System Components

Name	Customizable Parts	Remark
Slit	Width (μm)	10, 20, 50, 100 .etc
Grating	Lines Per Unit (L/mm)	300, 600, 1200, 1800
	Wavelength Range(nm)	200-1100 (User defined, about 650 range with 600 lines/mm grating)
Fiber	Core Diameter (μm)	9, 50, 200, 400, 600 .etc
	Wavelength Range(nm)	200-1100
	Outer Protection Layer	Normal or enhanced jacketing
	Interface Type	SMA 905 (standard) or FC, ST .etc

Detector	Model	Toshiba TCD1304
Cylindrical Lens	Optional	Enhance system's light gathering ability

Optional Components

Name	Remark
Light Source	Used for wide range spectral measurements or wavelength calibration: for example halogen tungsten, xenon or argon light sources
Integration Sphere	Used to acquire uniform light
Reflection Measurement Accessory	Components used for reflection spectrum measurements: for example standard reflection board or specialized clamp
Transmission Measurement Accessory	Components used for transmission spectrum measurement: for example sample holder and various kinds of cuvettes

Packing List

Name	Amount
ToupTek Micro-spectrometer	USB4000A
Fiber with SMA 905 Interface	1
Mini USB Data Transfer Wire	1
CD of Software and SDK	1

19.5 MAYA2000A-HAMAMATSU S9840(P/N: TS309840)

Mechanical Parameters

Dimensions (mm)	160×110×60
Weight (g)	900

Detector Specification

Detector	HAMAMATSU S9840
Wavelength Response Range (nm)	200-1100
Active Pixels	2048x14
Pixel size (μm)	14x14
Pixel well Capacity (ke-)	130
Read Out Noise (e- rms)	25
A/D Resolution	16 bit
Dark Current (pA/cm2)	40 (MAX 120)
Photo Response Non-uniformity	±3%
Sensitivity (uV/e-)	4.0

Optical Bench

Optical System	F/4, symmetrical crossed Czerny-Turner
Focal Length (mm)	98.5 (input); 98.5 (output)
Entrance Aperture (μm)	5, 10, 15, 20, 50 .etc width slits or fiber (customizable)
Grating	Various kinds of scoring grating or holographic grating with different grating constants and flare wavelengths (customizable)
Cylindrical Lens	optional
Optical Filter	Band pass or long pass filters to eliminate secondary spectrum
Fiber and Fiber Connection	NA 0.22, SMA905 (customizable)

Spectroscopic

Wavelength Range	Depends on optical grating
Optical Resolution (nm)	0.14-10 FWHM (Depends on grating constant, width of slit and detector model)
SNR	450:1 (Full signal)
Wavelength Tolerance (nm)	About ±0.2
Dark noise (RMS counts)	50
Integration Time	10μs-7.8s
Dynamic Range	2.0×108(system); 5200:1 (single acquisition)
Stray light	<0.05% at 550nm

Electronics

Power Consumption	400 mA×5 V DC
Data Transfer Speed	Full spectrum into memory every 5 ms at USB 2.0

Computer

Operating System	Windows /XP/Vista/7 /8(32 and 64 bit)
Interface	USB 2.0 (480Mbps), compatible with USB 1.1

Pre-defined System Components

Name	Customizable Parts	Remark
Slit	Width (μm)	10, 20, 50, 100 .etc
Grating	Lines Per Unit (L/mm)	300, 600, 1200, 1800
	Wavelength Range(nm)	200-1100 (User defined, about 650 range with 600 lines/mm grating)
Fiber	Core Diameter (μm)	9, 50, 200, 400, 600 .etc
	Wavelength Range(nm)	200-1100
	Outer Protection Layer	Normal or enhanced jacketing
	Interface Type	SMA 905 (standard) or FC, ST .etc

Detector	Model	HAMAMATSU S9840
Cylindrical Lens	Optional	Enhance system's light gathering ability

Optional Components

Name	Remark
Light Source	Used for wide range spectral measurements or wavelength calibration: for example halogen tungsten, xenon or argon light sources
Integration Sphere	Used to acquire uniform light
Reflection Measurement Accessory	Components used for reflection spectrum measurements: for example standard reflection board or specialized clamp
Transmission Measurement Accessory	Components used for transmission spectrum measurement: for example sample holder and various kinds of cuvettes

Packing List

Name	Amount
ToupTek Microspectrometer	MAYA2000A
Fiber with SMA 905 Interface	1
Mini USB Data Transfer Wire	1
CD of Software and SDK	1

19.7 DH-2000

The DH-2000 Deuterium Tungsten Halogen Light Source **combines the continuous spectrum of deuterium and tungsten halogen light sources in a single optical path.**

The combined-spectrum light source produces a powerful, stable output from 215-2500 nm. In addition, deep-UV versions of the light source are available, providing a 190-2500 nm wavelength range.

Options and Accessories

Integrated shutters are also available with the DH-2000 and can be driven either by a switch or by a TTL signal. Another option is to include a filter holder with the system, which accepts filters up to 4 mm in thickness and as large as 25-mm square or 20-mm round in diameter. All versions of the DH-2000 have an SMA 905 Connector for easy coupling to our spectrometers and accessories via optical fiber, and a safety shutter for blocking the light when the fiber is not attached.

Adjustable Power

All versions of the DH-2000 have a potentiometer on the back of the light source to balance the light level between the deuterium and tungsten halogen light sources. This potentiometer allows you to adjust the optical power of the tungsten halogen light from 10-100%.

Optical Fibers

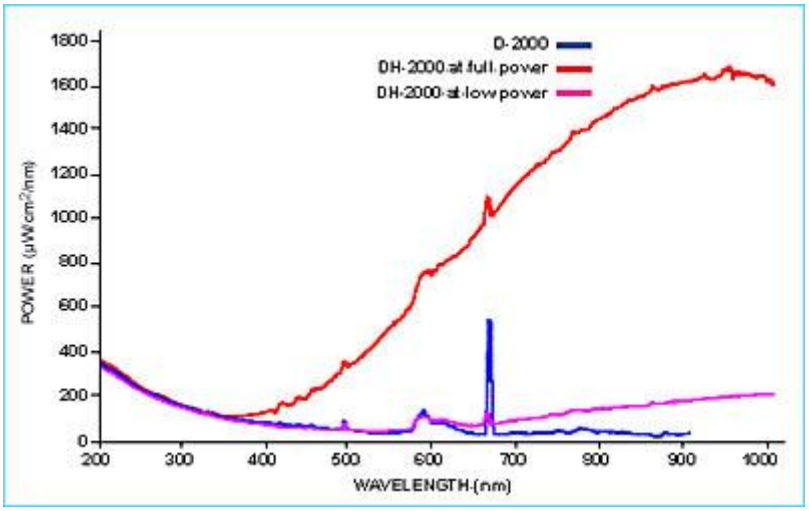
We recommend using our solarization-resistant optical fibers with all versions of the DH-2000.

DH-2000 Spectral Output

We recommend using our solarization-resistant optical fibers with all versions of the

DH-2000.

This spectral output graph shows the output of the DH-2000 (red) at full power and the DH-2000 with the tungsten halogen at low power (pink), D-2000 (blue). The height of the deuterium atomic emission line depends on the optical resolution of the spectrometer.



DH-2000 Deuterium Light Source Specifications

Dimensions:	150 mm x 135 mm x 319 mm
Weight:	3.5 kg
Power Consumption:	25 W (deuterium); 20 W (tungsten halogen)
Wavelength Range:	190-2500 nm (deep-UV deuterium and tungsten halogen bulbs) 215-2500 nm (standard deuterium and tungsten halogen bulbs)
Humidity:	5-95% without condensation at 40 ° C
Lamp Current:	Operating 85 V/0.3A
Lamp Lifetime:	1,000 hours
Lamp Voltage:	Ignition 580 V @20° C
Current Voltage Drift:	<0.01% per hour
Current Voltage Stability:	<5 x 10-6 peak-to-peak (0.1-10.0 Hz)
Operating Temperature:	5 ° C - 35 ° C
Power Requirements:	85-264 V 50/60 Hz
Radiation Characteristic:	Aperture 0.5 mm, numerical aperture 26° (13°); focused Total power: 100 W
Power Consumption:	Approximately 78VA
Warm-up Time:	40 minutes (deuterium); 20 minutes (tungsten halogen)
Markings:	CE; VDI/VDE 0160; EN 61010

19.9 LS-1-CAL-INT

Calibrated for use with integrating sphere.

The LS-1-CAL-INT is designed for calibrating the absolute spectral response of your system when using the Fiber Optic Integrating Sphere as your sampling optic. The LS-1-CAL-INT comes with a PTFE diffuser plug that fits snugly into the sample port of the Integrating Sphere to measure absolute spectral intensities of LEDs and other emission sources.

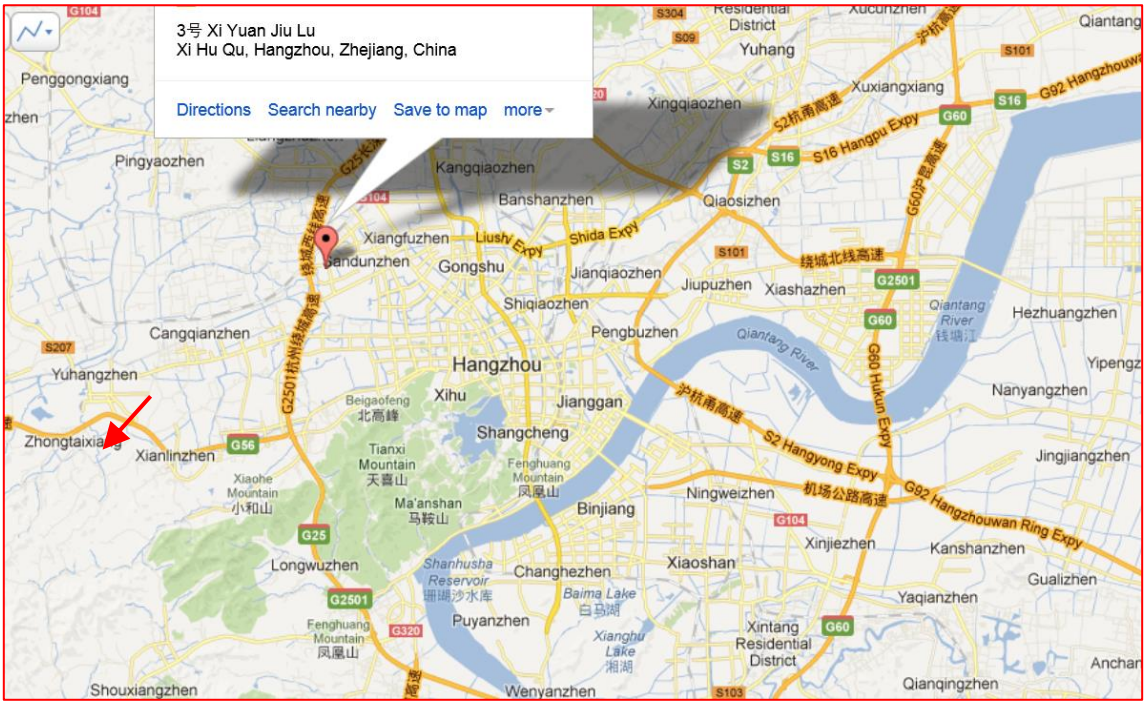
Basic Specification

Spectral Range (calibrated):	300-1050 nm (calibrated)
Power Consumption:	800 mA @ 12 VDC
Power Output:	4.85 watts
Bulb Life:	10000 hours (recommend recalibration after 50 hours of use)
Recalibration:	Required after ~50 hours of operation
Bulb Color Temperature:	2800 K
Output Regulation:	0.2% voltage
Time to Stabilized Output:	~30 minutes
Connector:	SMA 905 for fiber; 6.35-mm barrel for cosine corrector; PTFE plug for integrating sphere

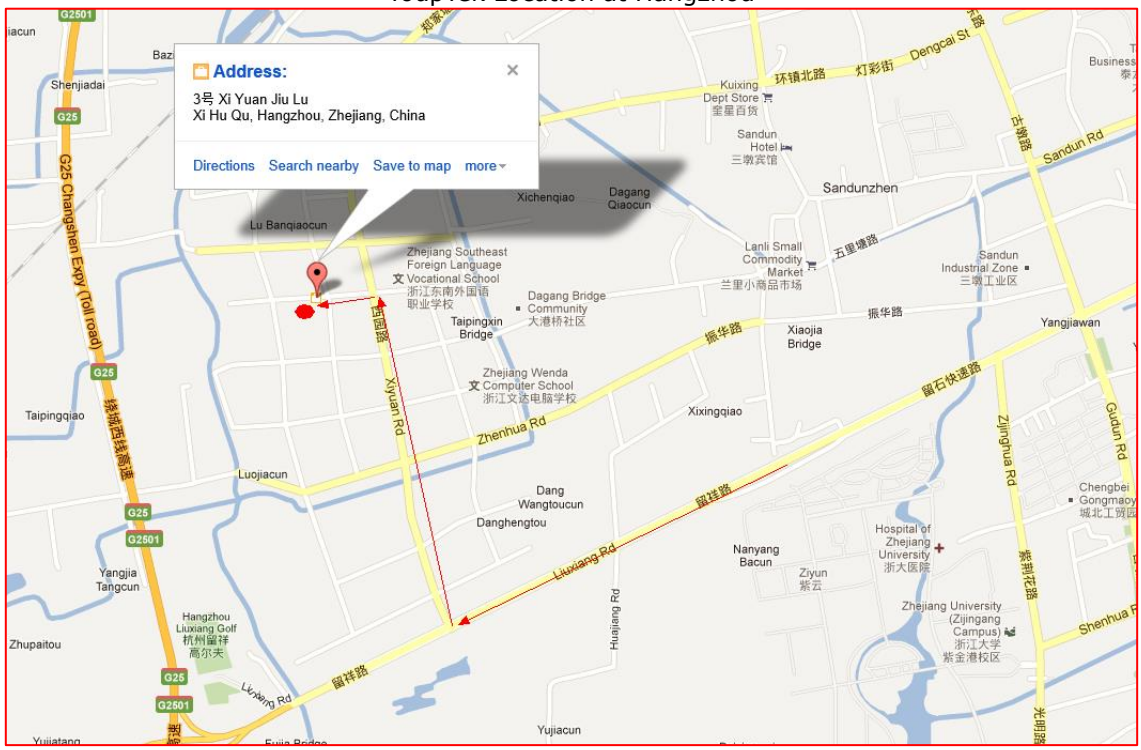
20 ToupTek® -- Contact Information

20.1 Address

Hangzhou ToupTek Photonics Co., Ltd
2F, Block 1, 3#, Xiyuan 9 Road
Hangzhou, 310030, Zhejiang,
P.R.China



ToupTek Location at Hangzhou



ToupTek Detailed Location at Xiyuan 9 Road

20.2 Telephone:

+86-571-8111-0735
+86-571-8111-0730
+86-571-8810-2638,
+86-138-6818-2253(Mobile Phone)

20.3 FAX

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20.4 E-mail

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20.5 IM

Skype: ToupTek
Q Q: 15999685

21 Revision History

6/07/2012	Change Capture/Control API's "DirectShow, Twain" to Native C/C++, C#, DirectShow, Twain and Labview
6/16/2012	Add UHCCD04000KPA to the model list
2/10/2013	Add U3CCD,U3CMOS,DH-2000,LS-1-CAL-INT
4/15/2013	U3CMOS08500KPA-SPECIAL parameter error (by Field YU)

L3CMOS 相机的+接口图，包装图
LCMOS 相机的+接口图，包装图
U3CMOS 相机的+接口图，包装图

P/N	Model Name	Sensor	Pixel	Frame Speed	Pixel Size	Sensor Size	Adaptor
TE-Cooling USB2.0 CCD Camera with C-Mount(SCCCD Series Camera, Available)							
TP905200A	SCCCD05200KPA	ICX655AQ	510	4fps//2592X1944	2.78X2.78	1/1.8	
TP901400A	SCCCD01400KPA	ICX285AQ	140	15fps//1360X1024	6.45X6.45	2/3	
TP901400A	SCCCD01400KPB	ICX205AK	140	15fps//1360X1024	4.65X4.65	1/2	
TM901400A	SCCCD01400KMA	ICX285AK	140	15fps//1360X1024	6.45X6.45	2/3	
TM901400B	SCCCD01400KMB	ICX205AL	140	15fps//1360X1024	4.65X4.65	1/2	
USB3.0 CMOS Camera with C-Mount(U3CMOS Series Camera, Available)							
TP114000A	U3CMOS14000KPA	MT9F002	1400	6.2fps//4096x3286	1.4X1.4	1/2.3	0.50X
TP110000A	U3CMOS10000KPA	MT9J003	1000	7.2fps//3584X2748	1.67X1.67	1/2.3	0.50X
TP108500A	U3CMOS08500KPA	Special	850	8.3fps//3584x2746,	1.67X1.67	1/2.4	0.50X
TP105100A	U3CMOS05100KPA	MT9P006	510	15fps//2592X1944	2.2X2.2	1/2.5	0.50X
TP103100A	U3CMOS03100KPA	AR0330	310	28fps//2048X1536	3.2X3.2	1/3	0.37X
USB3.0 CCD Camera with C-Mount(U3CCD Series Camera, Coming Soon)							
TP205200A	U3CCD05200KPA	ICX655AQ	510	NA	2.78X2.78	1/1.8	0.75X
TP205000A	U3CCD05000KPA	ICX282Q	500	NA	3.4X3.4	2/3	0.75X
TP201400A	U3CCD01400KPA	ICX285AQ	140	NA	6.45X6.45	2/3	0.75X
TM200300A	U3CCD00300KMA	ICX619AL	30	NA	5.6X5.6	1/4	0.37X
USB 2.0 Aptina CMOS Camera with C-mount(UCMOS Series Camera, Available)							
TP614000A	UCMOS14000KPA	MT9F002	1400	1.8fps//4096X3288	1.4X1.4	1/2.3	0.50X
TP610000A	UCMOS10000KPA	MT9J003	1000	1.9fps//3584X2748	1.67X1.67	1/2.3	0.50X
TP609000A	UCMOS09000KPB	Special	910	1.9fps//3488X2616	1.67X1.67	1/2.4	0.50X
TP608000A	UCMOS08000KPB	Special	800	1.9fps//3264X2448	1.67X1.67	1/2.5	0.50X
TP605100A	UCMOS05100KPA	MT9P001	510	5fps//2592X1944	2.2X2.2	1/2.5	0.50X
TP603100A	UCMOS03100KPA	MT9T001	310	8fps//2048X1536	3.2X3.2	1/2	0.50X
TP602000B	UCMOS02000KPB	Special	200	16fps//1600X200	3.2X3.2	1/3	0.50X
TP602000A	UCMOS02000KPA	MT9D111	200	8fps//1600X1200	3.2X3.2	1/3.2	0.37X
TP601300A	UCMOS01300KPA	MT9M001	130	18fps//1280X1024	3.6X3.6	1/3	0.37X

TP600350A	UCMOS00350KPA	MT9V001	35	30fps//640X480	5.6X5.6	1/4	0.37X
USB2.0 Sony EXCCD Camera with C-mount (EXCCD Series Camera, ,Available)							
TP8001400A	EXCCD01400KPA	ICX285AQ	140	15fps//1360X1024	6.45X6.45	2/3	0.75X
TM8001400A	EXCCD01400KMA	ICX285AK	140	15fps//1360X1024	6.45X6.45	2/3	0.75X
TM800300A	EXCCD00300KMA	ICX619AL	30	72fps//640X480	5.6X5.6	1/4	0.37X
USB2.0 Sony HCCD Camera with C-mount (UHCCD Series Camera , Available)							
TP705200A	UHCCD05200KPA	ICX655AQ	520	4fps//2592X1944	2.78X2.78	1/1.8	0.75X
TP705100A	UHCCD05100KPA	ICX452AQ	510	4fps//2592X1944	2.78X2.78	1/1.8	0.75X
TP705000A	UHCCD05000KPA	ICX282Q	500	4.5fps//2560X1920	3.4X3.4	2/3	0.75X
TP703100B	UHCCD03100KPB	ICX252AQ	310	6fps//2048X1536	3.45X3.45	1/1.8	0.75X
TP703100A	UHCCD03100KPA	ICX412AQ	310	6fps//2048X1536	3.45X3.45	1/1.8	0.75X
TP702000A	UHCCD02000KPA	ICX274AQ	200	10fps//1600X1200	4.4X4.4	1/1.8	0.75X
TP701400A	UHCCD01400KPA	ICX205AK	140	8fps//1360X1024	4.65X4.65	1/2	0.5X
TP701400B	UHCCD01400KPB	ICX205AK	140	15fps//1360X1024	4.65X4.65	1/2	0.5X
TP700800A	UHCCD00800KPA	ICX204AK	80	16fps//1024X768	4.65X4.65	1/3	0.5X
USB2.0 CMOS Eyepiece Camera with 23.2mm Ocular Tube (SCMOS Series Camera, Available)							
TP500350A	SCMOS00350KPA	Special	35	30fps/640X480	5.6X5.6	1/4	NA
TP501300A	SCMOS01300KPA	Special	130	7.5fps/1280X1024	3.6X3.6	1/3	NA
TP502000A	SCMOS02000KPA	Special	200	5fps/1600X1200	2.8X2.8	1/3.2	NA
TP503000A	SCMOS03000KPA	Special	300	3fps/2048X1536	2.2X2.2	1/2.7	NA
TP505000A	SCMOS05000KPA	Special	500	2fps/2592x1944	2.2X2.2	1/2.5	NA
Linear CCD Camera (LHCCD Series Camera, Available)							
TM400511A	LHCCD00511	ILX511	2048	NA	14X200	28	NA
TM400554A	LHCCD00554	ILX554	2048	NA	14X56	28	NA
TM401304A	LHCCD01304	TCD1304	3648	NA	8X200	29.2	NA

Camera Adaptor List

Article Code	Model	Field Size	Compatible Sensor
Adjustable Microscope Adaptor			
108001	AMA037	18X0.37=6.7	1/4”~1/3”

108002	AMA050	18X0.50=9	1/2”~2/3”
108003	AMA075	18X0.75=12	1/1.8”~1”
Fixed Microscope Adaptor			
108005	FMA037	18X0.37=6.7	1/4”~1/3”
108006	FMA050	18X0.50=9	1/2”~2/3”
108007	FMA075	18X0.75=12	1/1.8”~1”
Adjustable Telescope Adaptor			
108008	ATA037	18X0.37=6.7	1/4”~1/3”
108009	ATA050	18X0.50=9	1/2”~2/3”
108010	ATA075	18X0.75=12	1/1.8”~1”
Fixed Telescope Adaptor			
108011	FTA037	18X0.37=6.7	1/4”~1/3”
108012	FTA050	18X0.50=9	1/2”~2/3”
108013	FTA075	18X0.75=12	1/1.8”~1”
TV Adaptor (For Olympus CX,BX,IX)			
N2691500	U-TV0.35XC-2	22X0.35=7.7	1/3”~1/2”
N2691600	U-TV0.5xC-3	22X0.5=11	1/1.8”~1/2”
N2179000	U-TV0.63x	22X0.63=13.86	1”~2/3”~1/1.8”
037194	U-TV1x-2	22X1=22	1”~2/3”~1/1.8”
037175	U-CMAD3	1XC-Mount adaptor connector	

- ToupView for ToupCam camera;
- Unlimited language support;
- Windows XP, Vista, 2008, Win7, Win8(32/64 bit);
- Mac and Liniux;
- Ultra Fine color engine;
- Diversified useful tools;
- Medical microscopic imaging;
- Industrial detection;
- Machine vision;
- Astronomical observation;
