

USB-Camera Touptek I3ISPM, USB-3.0

The cameras of the I3ISPM series are CMOS cameras developed for the technical industry for use with very compact dimensions and C-mount threads, which are used with appropriate adapters instead of an eyepiece or on microscopes with a C-mount connection.

The image sensor used is high-performance Sony Exmor-R CMOS full color sensors with backlighting.

You will find cameras with color sensors and the same external dimensions in the I3ISPM series.



USB 3.0 ensures fast image transmission and, at the same time, the power supply of the cameras.

Dimensions: 33 x 33 x 33 mm without lens holder, without optics.

Connected with suitable optical adapters, this small camera can also be used on hand-held microscopes such as PEAK 2034/2054/2065 or Metocheck 7504 series instead of the eyepiece.

The I3ISPM is supplied with easy-to-use software for image processing. This also enables 2D measurements of lengths, circles, areas, angles, etc., as well as saving individual images and films.

The I3ISPM can be used in many ways for inspection and monitoring in machines and on microscopes.

Basic Data I3ISPM::

- SONY Exmor R(Back-illuminated) C-mount CMOS sensor with USB3.0 interface
- Real-time 8/12bit depth switch(depending on sensor)
- Ultra-fine™ HISP VP and
- USB3.0 5 Gbps interface ensuring high frame rates(Up to 17 frames for 21M Resolution)
- Ultra-low noise and low power dissipation by using column-parallel A/D conversion
- With hardware resolution among 0.5M to 5M
- Support hardware/software triggering, free running mode
- Support firmware updating
- CNC aluminum alloy housing
- With advanced video & image processing application ToupView
- Providing Windows/Linux/Mac OS multiple platforms SDK
- Native C/C++, C#/VB.Net, DirectShow, Twain, LabView

Available Versions

Order Code	Sensor & Size(mm)	Pixel(μm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure
I3ISPM00500KPA IP800500A(New)	0.5M/IMX433LQJ(C,GS) 1/1.7" (7.31x5.58)	9.0x9.0	4610mv with 1/30s 0.3mv with 1/30s	166.5fps@812 × 620	1x1	15us~5s
I3ISPM01500KPA IP801500A(New)	1.5M/IMX273LQR(C,GS) 1/2.9" (4.97x3.73)	3.45×3.45	1146mv with 1/30s 0.15mv with 1/30s	226.5@1440 × 1080 506@720 × 540	1x1 1x1	15us~5s
I3ISPM03100KPA IP803100A(New)	3.1M/IMX252LQR(C,GS) 1/1.8" (7.07x5.30)	3.45×3.45	1146mv with 1/30s 0.15mv with 1/30s	114@2048 × 1536 231@1024 × 768	1x1 1x1	15us~5s
I3ISPM03100KPB IP803100B(New)	3.1M/IMX265LQR(C,GS) 1/1.8" (7.07x5.30)	3.45×3.45	1146mv with 1/30s 0.15mv with 1/30s	55.6@2048 × 1536 116.6fps@1024 × 768	1x1 1x1	15us~5s
I3ISPM05000KPA IP805000A	5.0M/IMX250LQR(C,GS) 2/3" (8.45x7.07)	3.45×3.45	1146mv with 1/30s 0.15mv with 1/30s	71@2448 × 2048 175.8@1224 × 1024	1x1 1x1	15us~5s
I3ISPM05000KPB IP805000B	5.0M/IMX264LQR(C,GS) 2/3" (8.45x7.07)	3.45×3.45	1146mv with 1/30s 0.15mv with 1/30s	35.7@2448 × 1536 88.4@1224 × 1024	1x1 1x1	15us~5s
I3ISPM06300KPA IP806300A	6.3M/IMX178LQJ(C, RS) 1/1.8" (7.37x4.92)	2.4x2.4	425mv with 1/30s 0.15mv with 1/30s	58.7fps@3072 × 2048 59.5fps@1536 × 1024	1x1 2x2	17us~15s

C: Color; M: Monochrome; GS: Global Shutter

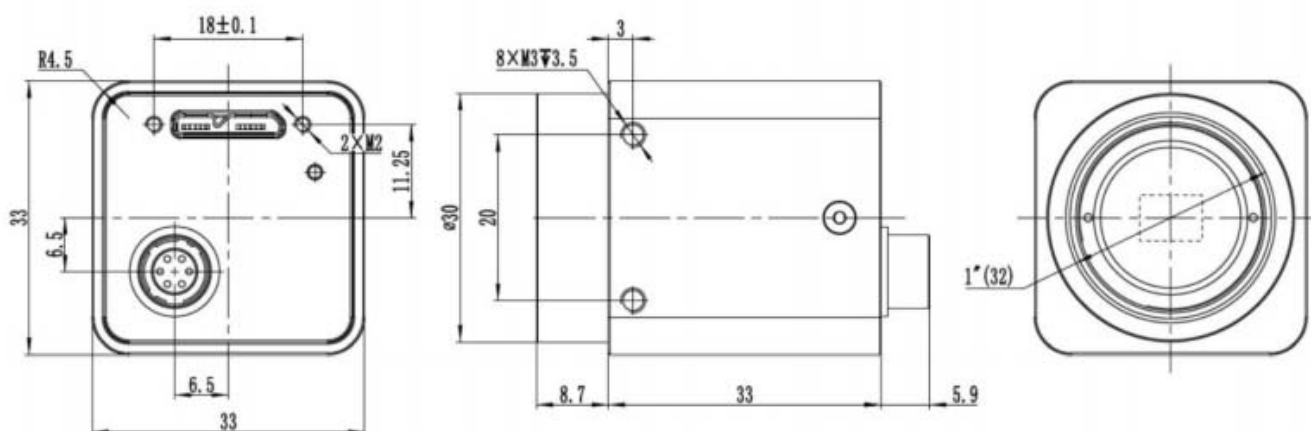
Other Specification for I3 Camera	
Spectral Range	380-650nm (with IR-cut Filter)
White Balance	ROI White Balance/ Manual Temp Tint Adjustment/NA for Monochromatic Sensor
Color Technique	Ultra-fine™ HISPVP /NA for Monochromatic Sensor
Capture/Control SDK	Windows/Linux/macOS/Android Multiple Platform SDK(Native C/C++, C#/VB.NET, Python, Java, DirectShow, Twain, etc)
Recording System	Still Picture and Movie
Running Mode	Free/Software Triggering /External Triggering
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 /10 (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

Optional Adapters:

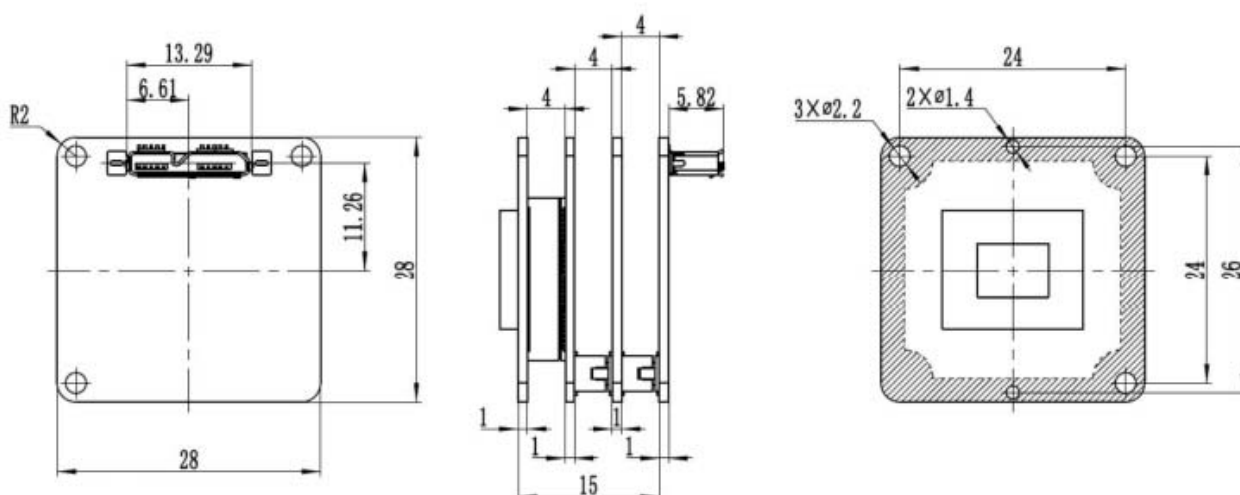
Microscope Camera	 <p>I3+AMAXXX(23.2mm Adapter)</p>  <p>I3+FMAXXX(23.2mm Adapter)</p>
Telescope Camera	 <p>I3+ATAXXX(31.75mm Adapter)</p>  <p>I3+FTAXXX(31.75mm Adapter)</p>

Sizes:

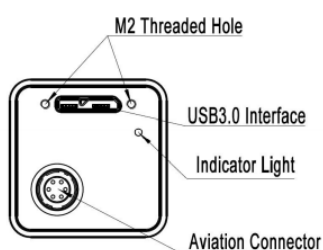
The I3 series camera body, made from tough, CNC aluminum alloy, ensures a heavy duty, workhorse solution. The camera is designed with a high quality IR-CUT to protect the camera sensor. No moving parts included. This design ensures a rugged, robust solution with an increased lifespan when compared to other industrial camera solution.



Dimension of I3 Series camera



Dimension of I3 Series Camera PC-board



	Color	Pin	Signal	Signal description
	red	1	DIR_GPIO	Direct-coupled General Purpose I/O (Software configurable input / output) (line2)
	white	2	OPTO_GND	Opto-isolated signal ground
	blue	3	OPTO_OUT	Opto-isolated output signal(line1)
	green	4	OPTO_IN	Opto-isolated input signal(line0)
	black	5	GND	Direct-coupled signal ground
	yellow	6	5V	5 VDC power input

Table 7- 8 V2.0 and above pin signal definitions

Packing Information



Standard Camera Packing List			
A	Carton L:52cm W:32cm H:33cm (20pcs, 12~17Kg/ carton), not shown in the photo		
B	Gift box L:15cm W:15cm H:10cm (0.58~0.6Kg/ box)		
C	I3 series USB3.0 C-mount CMOS camera		
D1	High-speed USB3.0 A male to B male gold-plated connectors cable /3.0m		
D2	Lockable high-speed micro USB3.0 cable(Optional)		
E	6 Pin I/O cable		
F	CD (Driver & utilities software, Ø12cm)		
Optional Accessory			
G	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 108004/AMA100
		C-mount to Dia.31.75mm eyepiece tube (Please choose 1 of them for your telescope)	108008/ATA037 108009/ATA050 108010/ATA075 108011/ATA100
H	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 108008/FMA100
		C-Mount to Dia.31.75mm eyepiece tube (Please choose 1 of them for your telescope)	108011/FTA037 108012/FTA050 108013/FTA075 108014/FTA100
Note: For F and G 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;			
I	108015(Dia.23.2mm to 30.0mm Ring)/Adapter rings for 30mm eyepiece tube		
J	108016(Dia.23.2mm to 30.5mm Ring)/ Adapter rings for 30.5mm eyepiece tube		
K	108017(Dia.23.2mm to 31.75mm Ring)/ Adapter rings for 31.75mm 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.)	

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