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Touptek Microscope - Camera Series MAX
USB 3.0 Data Transfer

The cameras of the MAX series use SONY Exmor or GSENSE sensors with a large pixel size or full-screen CMOS sensor as the image recording device and USB 3.0 as the transmission interface to increase the frame rate.

With the two-stage Peltier cooling element, the sensor can be regulated to -40 ° C below ambient temperature. This increases the signal-to-noise ratio considerably and reduces the image noise.

The intelligent structure should ensure the efficiency of the thermal radiation and avoid the moisture problem. An electric fan is used to increase the rate of heat radiation.

The connection of the Max cameras can be done either via C-Mount or M52-0.75 mm thread. Matching adapters are available as optional accessories

MAX comes with advanced video & image processing application ToupView; Providing Windows/Linux/OSX multiple platform SDK; Native C/C++, C#/VB.NET, DirectShow, Twain Control API;
The MAX can be widely used in low light environment and microscope fluorescence image capture and analysis, as well as the astronomy deep sky applicati

The basic characteristic of MAX can be summarized as follows:

- Standard C-Mount camera with SONY Exmor or GSENSE CMOS sensors from 4.2M to 61M
- Big pixels or full-frame CMOS sensor
- Two-stage TE-cooling with controllable electric fan
- Sensor chip cooling up to-40°C below ambient temperature
- Working temperature can be regulated to specified temperature in 5 minutes
- Smart structure to assure the heat radiation efficiency and avoid the moisture problem
- IR-CUT/AR coated windows(Optional)
- M52 x0.75 or C-mount
- USB3.0 5Gbit/second interface ensuring high speed data transmission
- Up to 1000 seconds long time exposure
- Embedded up to 16bit hardware ISP module
- Including 2-D denoising and sharpening
- Ultra-FineTM color engine with perfect color reproduction capability
- Support the capture of video and image in software / hardware trigger mode
- With advanced video & image processing application ToupViewSupport both video and trigger modes
- Providing Windows/Linux/Mac OS multiple platforms SDK
- Native C/C++, C#/VB.NET, DirectShow, Twain control API;

Available Versions

Order Code	Sensor & Size(mm)	Pixel(μm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure
MAX62AM MM1062A	61M/IMX455(M) 2.7"(35.98x23.99) Full Frame	3.76x3.76	871mv with 1/30s 0.039mv with 1/30s 88.3dB/47.1dB	6.1@9568x6380(16bit) 19.1@4784x3190 55.6@3184x2124 191@1040x706	1x1 2x2 3x3 9x9	0.1ms~1000s
MAX62AC MP1062AC	61M/IMX455(C) 2.7"(35.98x23.99) Full Frame	3.76x3.76	484.5mv with 1/30s 0.039mv with 1/30s 85.8dB/47.0dB	6.1@9568x6380(16bit) 19.1@4784x3190 55.6@3184x2124 191@1040x706	1x1 2x2 3x3 9x9	0.1ms~1000s
MAX24AC MP1024A	24M/IMX410(C) 2.7"(36.02x24.00) Full Frame	5.94x5.94	573mv with 1/30s 0.037mv with 1/30s 87.3dB/50.2dB	15.3@6064x4040(14bit) 41@3024x2012 114@2016x1342	1x1 2x2 3x3	0.1ms~1000s
MAX04AM MM1004A	4.2M/GSENSE2020e(M) 1.2"(13.31x13.31)	6.5x 6.5	8.1x107 (e-/((W/m2).s)) Peak QE 64.2% @595nm 13(e-/s/pix) 66.6dB/46dB	44.5@2048x2048 44.5@1024 x 1022	1x1 2x2	0.1ms~1000s
MAX04BM MM1004B	4.2M/GSENSE2020BSI(M, UV) 1.2"(13.31x13.31)	6.5 x 6.5	1.1x108 (e-/((W/m2).s)) Peak QE 93.7% @550nm 80(e-/s/pix) 65.8dB/47dB	43.5@2048 x2048 43.5@1024 x1024	1x1 2x2	0.1ms~1000s
MAX04CM MM1004C	4.2M/GSENSE400BSI(M, UV) 2.0"(22.53x22.53)	11 x 11	3.25x108 (e-/((W/m2).s)) Peak QE 95.3% @560nm 345(e-/s/pix) 68.5dB/50dB	37@2048 x2048 37@1024 x1024	1x1 2x2	0.1ms~1000s

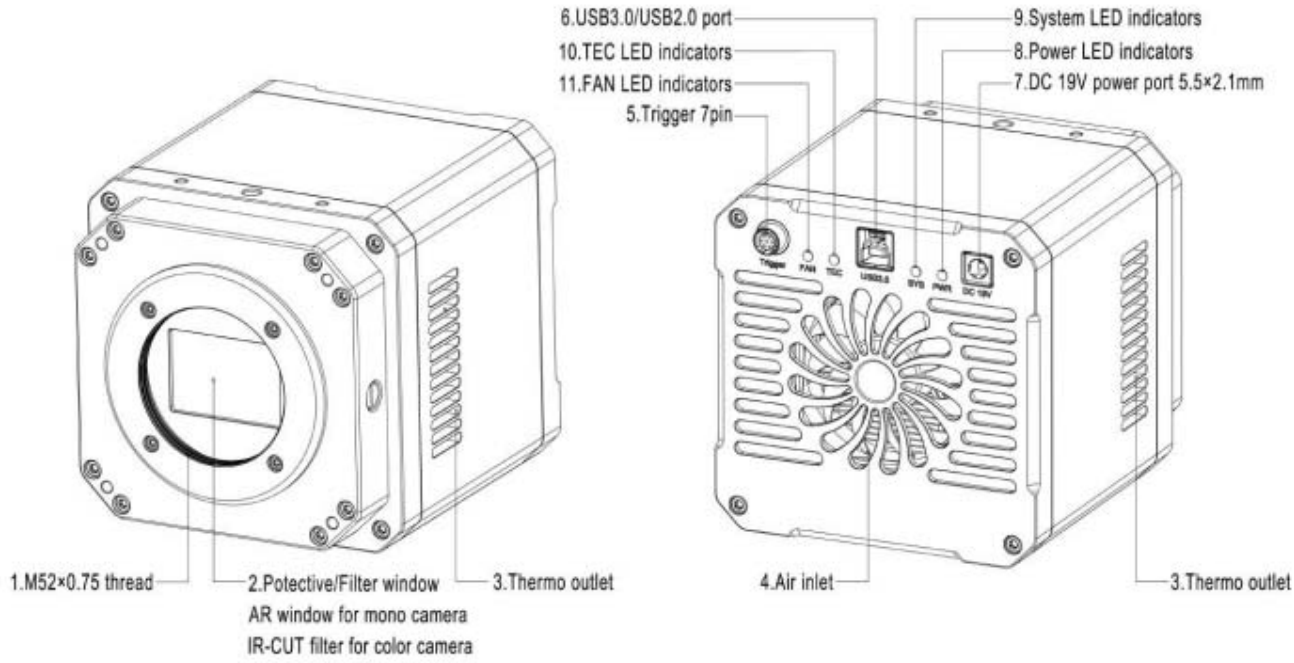
C:Color; M:Monochrome; UV: Ultra-violet sensitive

Specifikations

Other Specification for MAX Cameras	
Spectral Range	200-1000nm(The spectral response range of each model is different. Please refer to the product manual of each model for detailed parameters)
Protect Windows	IR CUT (AR protection glass is optional)
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 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(Free running mode or trigger mode)
Cooling System*	Two-stage TE-cooling System -40 °C below Camera Body Temperature
IO Interface	One optocoupler isolation input, one optocoupler isolation output, two direct connection GPIO
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 Adapter for Cooling System, DC19V, 4A
Software Environment	
Operating System	Microsoft® Windows® XP / Vista / 7 / 8 /10 (32 & 64 bit)

Sizes of MAX-Series

The MAX body, made from tough, alloy with CNC technique, ensures a heavy duty, workhorse solution. The camera is designed with a high quality IR-CUT or AR to block the IR light or protect the camera sensor. The fan‘s vibration is minimized to the low level to eliminate the vibration caused imaging blur. This design ensures a rugged, robust solution with an increased lifespan when compared to the other industrial camera solutions.

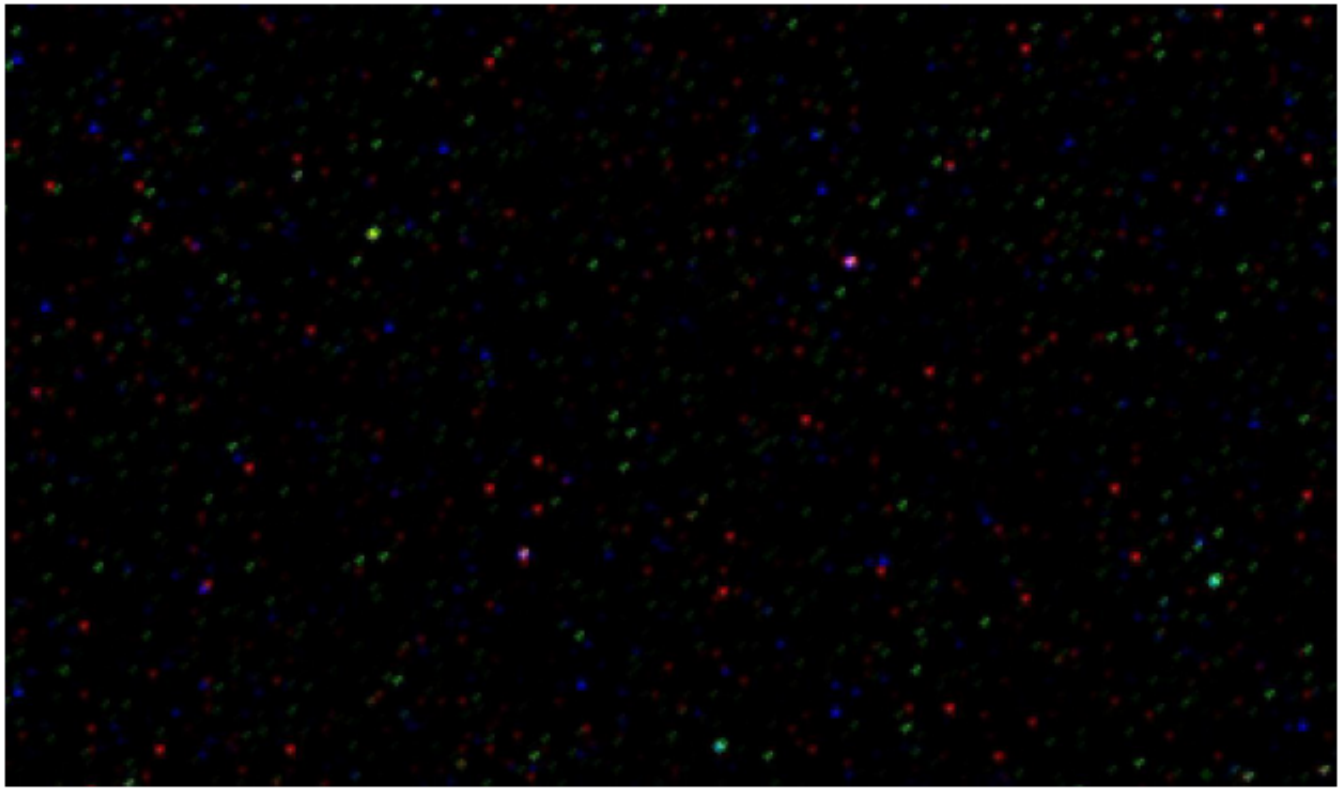


Packing Information

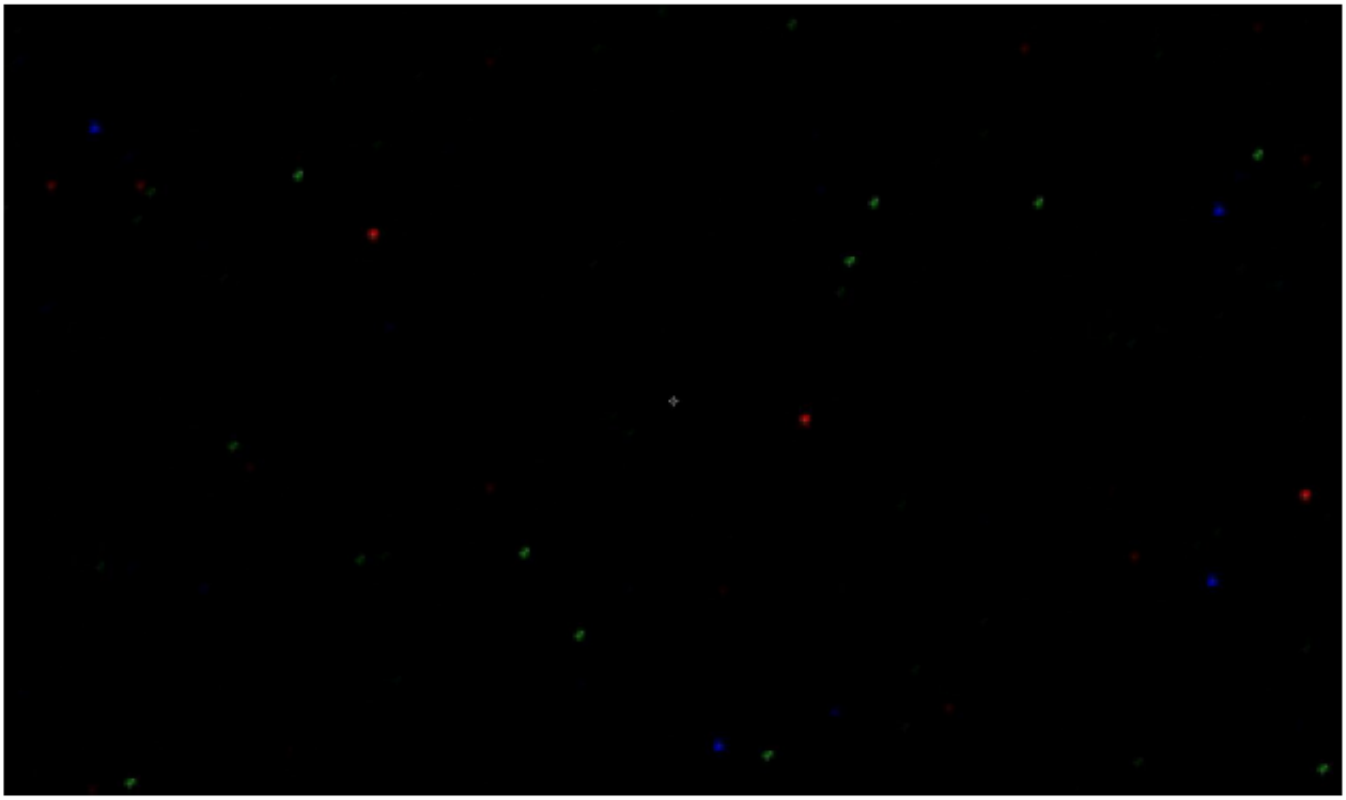
Packing Information of MAX Series Camera(Square)

Standard Package	
A	Carton L:50cm W:30cm H:30cm (20pcs, 12~17Kg/ carton), not shown in the photo(TBD)
B	3-A safety equipment case: L:28cm W:23cm H:15cm (1pcs, 2.8Kg/ box); Carton size:L:28.2cm W:25.2cm H:16.7cm(TBD)
C	MAX camera(C-mount)
D	Power adapter: input: AC 100~240V 50Hz/60Hz, output: DC19 V 4A
E	High-Speed USB3.0 A male to B male gold-plated connectors cable /1.5m
F	IO cable
G	CD (Driver & utilities software, Ø12cm)

Sample Photos Captured with MAX Camera(TBD)



Hot noise for the MAX at Gain 20 , 600 second, 15 Centidegree



Hot noise for the MAX Gain 20 , 600 second, minus 15 Centidegree