

Microscope Large Format TE-Cooling USB 3.0 CMOS Camera MAXTECMOS series



2022 V1

For customized projects please Contact us:

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MAXTECMOS series camera adopts SONY Exmor or GSENSE with big pixel size or full-frame CMOS sensor as the image-picking device and USB3.0 is used as the transfer interface to increase the frame rate.

With the two-stage Peltier cooling sensor chip to -40°C below ambient temperature. This will greatly increase the signal-to-noise ratio and decrease the image noise. A smart structure is designed to assure heat radiation efficiency and avoid moisture problems. An electric fan is used to increase the heat radiation speed.

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



Features

- Standard C-Mount camera with SONY Exmor or GSENSE CMOS sensors;
- Big pixels or full-frame sensor size;
- Two-stage TE-cooling with controllable electric fan;
- Sensor chip cooling up to 40°C below ambient temperature;
- Working temperature can be regulated to a specified temperature in 5 minutes;
- Smart structure to assure the heat radiation efficiency and avoid the moisture problem;
- IR-CUT/AR coated windows;
- M52 x0.75 or C-mount
- Up to 1000 seconds long time exposure;
- Embedded up to 16bit hardware ISP module;
- Including 2-D denoising and sharpening;
- USB3.0 5Gbit/second interface ensuring high-speed data transmission;
- Ultra-Fine 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;
- Support both video and trigger modes;
- Providing Windows/Linux/Mac OS multiple platforms SDK;
- Native C/C++, C#/VB.NET, DirectShow, Twain Control API;

Specifications

Order Code	Sensor & Size(mm)	Pixel(μm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure
MAXTECMOS62AM 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
MAXTECMOS62AC 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
MAXTECMOS24AC 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
MAXTECMOS04AM MM1004A	4.2M/GSENSE2020e(M) 1.2"(13.31x13.31)	6.5x 6.5	8.1x10 ⁷ (e-/((W/m ²).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
MAXTECMOS04BM MM1004B	4.2M/GSENSE2020BSI(M, UV) 1.2"(13.31x13.31)	6.5 x 6.5	1.1x10 ⁸ (e-/((W/m ²).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
MAXTECMOS04CM MM1004C	4.2M/GSENSE400BSI(M, UV) 2.0"(22.53x22.53)	11 x 11	3.25x10 ⁸ (e-/((W/m ²).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

Other Specifications for MAXTECMOS Series

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
Cooling System*	Two-stage TE-cooling System -45 °C below Camera Body Temperature
IO Interface	One optocoupler isolation input, one optocoupler isolation output, two direct connection GPIO

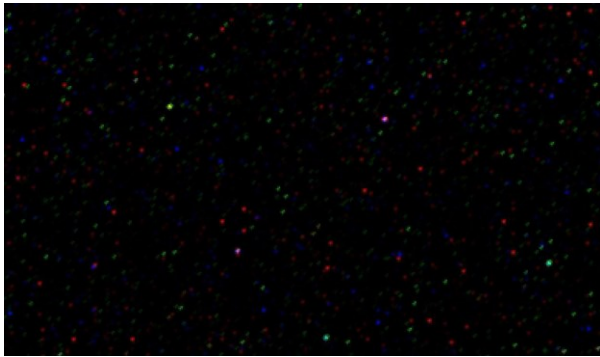
Operating Environment

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

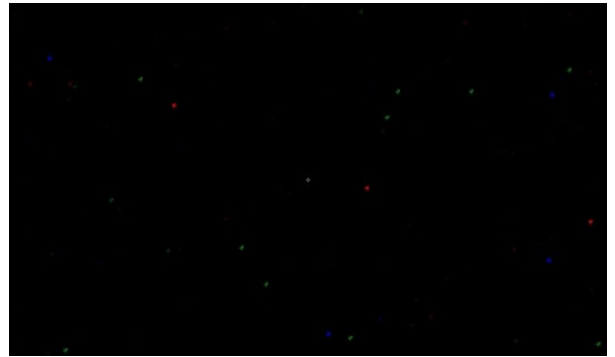
Software Environment

Operating System	Microsoft® Windows® XP / Vista / 7 / 8 /10 /11 (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

Sample Photos Captured with MAXTECMOS Series (TBD)



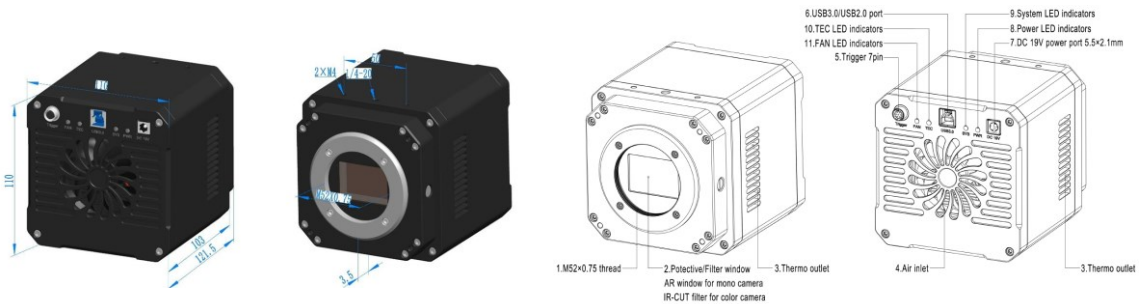
Hot noise for the MAXTECMOS at Gain 20,
600 second, 15 Centidegree



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

Dimension

The MAXTECMOS series 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.



Item	Specification
1	M52F × 0.75 thread
2	Protective window, 39 × 27 × 1.1mm, AR window for mono camera, IR-cut for color camera
3	Thermo outlet
4	Air inlet
5	Trigger(7 pin)
6	USB 3.0/ USB 2.0 port
7	DC 19V 4.74A power port, 5.5 × 2.1mm
8	Power LED indicators
9	System LED TEC LED
10	TEC LED indicators
11	Fan LED indicators

Packing Information



Standard Package	
A	Carton L:50cm W:30cm H:30cm (20pcs, 12~17Kg/ carton), not shown in the photo
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
C	One MAXTECMOS series camera
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 (Drive & utilities software, Ø12cm)
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.)