



MICAPS HPTEC3CMOS

C-mount USB 3.0 CMOS Cameras
SONY PREGIUS CMOS Sensor



The HPTEC3CMOS camera utilizes a SONY PREGIUS CMOS sensor for capturing images, and it connects via USB 3.0 for efficient data transfer. The HPTEC3CMOS hardware resolutions range from 0.5MP to 45MP, housed in a compact CNC aluminum alloy casing with Two-stage TE-cooling. Equipped with a two-stage peltier cooling system, the sensor chip can reach temperatures as low as -42 degrees below the ambient temperature. This feature significantly improves the signal-to-noise ratio and reduces image noise. The camera is designed with a smart structure to enhance heat radiation efficiency and prevent moisture-related issues. An controllable electric fan is incorporated to expedite the heat dissipation process.

The HPTEC3CMOS comes bundled with the advanced Micaps MicroView application for video and image processing. It supports multiple platforms, including Windows, Linux, macOS, and Android, with SDKs for various programming languages such as Native C/C++, C#/VB.NET, Python, Java, DirectShow, Twain, and more. This camera is well-suited for applications in low-light environments, as well as capturing and analyzing microscope fluorescence images. Additionally, it can be utilized for deep-sky astronomy applications.

Features

- SONY PREGIUS CMOS sensor with USB 3.0 interface
- Peltier Sensor chip cooling up to 42°C below ambient temperature
- Working temperature can be regulated to specified temperature in 5 minutes
- Rolling Shutter
- IR-CUT/AR coated windows
- Up to 1 hour long time exposure
- Super-Fine™ color engine with perfect color reproduction capability Support both video and trigger modes

Applications

- Scientific research, education (teaching, demonstration and academic exchanges)
- Digital laboratory, medical research
- Industrial visual (PCB examination, IC quality control)
- Medical treatment (pathological observation)
- Food (microbial colony observation and counting)
- Aerospace, military (high sophisticated weapons)

Model No.	Sensor & Size(mm)	Pixel(μm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure
HPTEC3CMOS45000MA	45M/IMX492(M) 4/3"(19.11x13.00)	2.315x2.315	351mV with 1/30s 0.12mV with 1/30s	8.1@8176x5616 30.0@4080x2808 8.1@7408x5556 33.0@3696x2778 10.4@8176x4320 34.7@4096x2160 62.5@2048x1080 86.5@1360x720 8 Bit / 12 Bitt	1x1(3:2) 2x2(3:2) 1x1(4:3) 2x2(4:3) 1x1(17:9) 2x2(17:9) 3x3(17:9) 4x4(17:9)	0.1ms~1h
HPTEC3CMOS26000CA	26M/IMX571(C) 1.8"(23.48x15.67) APS-C	3.76 x3.76	485mv with 1/30s 0.07mv with 1/30s	14@6224x4168 37@3104x2084 110@2064x1386 8 Bit / 16 Bit	1x1 2x2 3x3	0.1ms~1h
HPTEC3CMOS26000MA	26M/IMX571(M) 1.8"(23.48x15.67) APS-C	3.76 x3.76	871mv with 1/30s 0.07mv with 1/30s	14@6224x4168 37@3104x2084 110@2064x1386 8 Bit / 16 Bit	1x1 2x2 3x3	0.1ms~1h
HPTEC3CMOS21000CA	21M/IMX269(C) 4/3"(17.4x13.1)	3.3 x3.3	400mv with 1/30s 0.1mv with 1/30s	17@5280x3954 17@3952x3952 56@2640x1976 67@1760x1316 192@584x438 8 Bit / 12 Bit	1x1 1x1 2x2 3x3 9x9	0.1ms~1h
HPTEC3CMOS20000CA	20M/IMX183(C) 1"(13.056x8.755)	2.4 x2.4	462mv with 1/30s 0.21mv with 1/30s	19.0@5440x3648 48.8@2736x1824 59.4@1824x1216 8 Bit / 12 Bit	1x1 2x2 3x3	0.1ms~1h

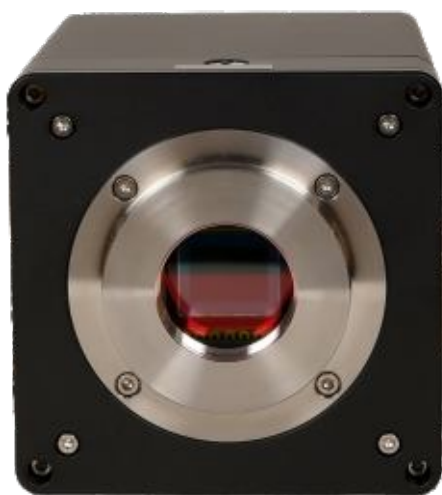
Model No.	Sensor & Size(mm)	Pixel(μm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure
HPTEC3CMOS20000MA	20M/IMX183(M) 1“(13.056x8.755)	2.4 x2.4	388mv with 1/30s 0.21mv with 1/30s (F8.0)	19.0@5440x3648 48.8@2736x1824 59.4@1824x1216 8 Bit / 12 Bit	1x1 2x2 3x3	0.1ms~1h
HPTEC3CMOS16000CA	16M/MN34230PLJ(C) 4/3“(17.6x13.3)	3.8x3.8	2413LSB 89.1LSB (Gain = 0dB)	6@4640x3506 20@2304x1750 48.0@1536x1160 8 Bit / 12 Bit	1x1 2x2 3x3	0.15ms~1h
HPTEC3CMOS16000MA	16M/MN34230ALJ(M) 4/3“(17.6x13.3)	3.8x3.8	2650LSB 89.1LSB (Gain = 0dB)	22.5@4648x3506 43.0@2304x1750 48.0@1536x1168 8 Bit / 12 Bit	1x1 2x2 3x3	0.15ms~1h
HPTEC3CMOS10300CA	10.3M/IMX294(C) 4/3“(19.11x13.0)	4.63 x4.63	419mv with 1/30s 0.12mv with 1/30s	30.0@4128x2808 38.5 @4096x2160 59.8@2048x1080 87.2@1360x720 8 Bit / 14 Bit	1x1 1x1 2x2 3x3	0.15ms~1h
HPTEC3CMOS10300MA	10.3M/IMX492(M) 4/3“(19.11x13.0)	4.63 x4.63	701mv with 1/30s 0.12mv with 1/30s	40@2992x3000 62@1488x1500 186@992x998 8 Bit / 14 Bit	1x1 1x1 2x2 3x3	0.15ms~1h
HPTEC3CMOS9000CA	9M/IMX533(C) 1“(11.28x11.28)	3.76 x3.76	534mv with 1/30s 0.04mv with 1/30s	40@2992x3000 62@1488x1500 186@992x998 8 Bit / 14 Bit	1x1 2x2 3x3	0.1ms~1h
HPTEC3CMOS9000MA	9M/IMX533(M) 1“(11.28x11.28)	3.76 x3.76	534mv with 1/30s 0.04mv with 1/30s	40@2992x3000 62@1488x1500 186@992x998 8 Bit / 14 Bit	1x1 2x2 3x3	0.1ms~1h
HPTEC3CMOS8300CA	8.3M/IMX585(C) 1/1.2“(11.14x6.26)	2.9x2.9	5970mv with 1/30s 0.15mv with 1/30s	45@3840x2160 70@1920x1080 8 Bit / 12 Bit	1x1 2x2	0.1ms~1h
HPTEC3CMOS7100CA	7.0M/IMX428(C,GS) 1.1“(14.4x9.9)	4.5 x4.5	2058mv with 1/30s 0.15mv with 1/30s	51.3@3200x2200 133.8@ 1584x1100 8 Bit / 12 Bit	1x1 1x1	0.1ms~1h
HPTEC3CMOS7100MA	7.0M/IMX428(M,GS) 1.1“(14.4x9.9)	4.5 x4.5	3354mv with 1/30s 0.15mv with 1/30s	51.3@3200x2200 133.8@ 1584x1100 8 Bit / 12 Bit	1x1 1x1	0.1ms~1h
HPTEC3CMOS2300CA	2.3M/SC2110(C,RS) 1.69“(23.0x14.4)	12x12	120000 mV/lux·s @HCG	120@1920x1200 8 Bit / 12 Bit	1x1	0.1ms~1h
HPTEC3CMOS2300MA	2.3M/SC2110(M,RS) 1.69“(23.0x14.4)	12x12	120000 mV/lux·s @HCG	120@1920x1200 8 Bit / 12 Bit	1x1	0.1ms~1h
HPTEC3CMOS1700CA	1.7M/IMX432(C,GS) 1.1“(14.4x9.9)	9.0 x9.0	4910mv with 1/30s 0.3mv with 1/30s	33@1600x1100	1x1	0.1ms~1h
HPTEC3CMOS1700MA	1.7M/IMX432(M,GS) 1.1“(14.4x9.9)	9.0 x9.0	8100mv with 1/30s 0.3mv with 1/30s	94@1600x1100	1x1	0.1ms~1h
HPTEC3CMOS1300MA	1.3M/GLUX9701BSI (M,UV) 1“(12.493x9.994)	9.76 x9.76	2.57x108(e-/((W/m2).s)) QE89%@610nm 0.08(e-/s/pix)@-28C	30fps@1280×1024 30fps@640×512 8 Bit / HDR 16 Bit	1x1 2x2	0.1ms~1h
HPTEC3CMOS500MA	0.5M/GLUX1605BSI (M,UV) 1“(12.8x9.6)	16.0 x16.0	TBD	60.0@800x600 60.0@400x300 8 Bit / HDR 16 Bit	1x1 2x2	0.1ms~1h
HPTEC3CMOS8300MA	8M/IMX585(M,RS) 1/1.2“(11.2x6.3)	2.9x2.9	9560mv with 1/30s	24@3840x2160 8 Bit /12 Bit /HDR16 Bit	1x1 2x2	0.1ms~1h

Other Hardware Configuration	
Spectral Range	380-650nm (with IR-filter), for Monochromatic Camera, AR Is Used
White Balance	ROI White Balance/ Manual Temp-Tint Adjustment
Color Rendering Technique	Ultra Fine Color Engine
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 -42 °C below Camera Body Temperature

Operating Environment	
Operating Temperature	-10 °C~ 50 °C
Storage Temperature	-20 °C~ 60 °C
Operating Humidity	30~80%RH
Storage Humidity	10~60%RH
Power Supply	DC 5V over PC USB Port External Power Adapter for Cooling System, DC12V,3A

Software Environment

Operating System	Support Microsoft Windows XP / Vista / 7 / 8 / 10(32 & 64 bit) OS X (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



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