MICAPS HPS3CMOS SERIES

C-mount USB3.0 CMOS Cameras
SONY PREGIUS CMOS Sensor

The HPS3CMOS Series camera uses a high-quality SONY CMOS sensor to capture images, and it employs USB3.0 for fast data transfer. With a hardware resolution of 1.5 to 45 megapixels, it's housed in a durable CNC aluminum alloy casing. Equipped with a 12-bit Super-fine Hardware Image Signal Processor Video Pipeline (Super-FineTM HISPVP), the HPS3CMOS Series handles tasks like Demosaic, Adjustments, Automatic Exposure, Gain Adjustment, One Push WhiteBalance, Chrominance Adjustment, Saturation Adjustment, Gamma Correction, Luminance Adjustment, and Contrast Adjustment. It processes Bayer data and produces RAW data for 8/12 bit output. This offloads heavy processing tasks from the PC to the Super-FineTM HISPVP, significantly boosting processing speed.

The camera comes bundled with the advanced Micaps MicroView video and image processing application. It supports multiple platforms such as Windows, Linux, macOS, and Android, with SDKs available for Native C/C++, C#/VB.NET, Python, Java, DirectShow, Twain, and more. The HPS3CMOS Series is well-suited for use in bright field light environments and excels in microscope image capture and analysis, offering a higher frame rate for superior performance.

Features

- SONY CMOS sensor with USB3.0 interface
- Ultra low noise and low power dissipation
- Global Shutter
- Standard C-Mount camera
- With advanced video & image processing application Micaps MicroView
- Super-fine Color hardware Color Engine ensuring high frame rates
- (Up to 15 frames for 20M Resolution)

Model No.	Sensor & Size(mm)	Pixel(μm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure
HPS3CMOS45000CA	45M/IMX492[C] 1.4" (18.93x13.00)	2.315x2.315	108mv with 1/30s 0.03mv with 1/30s	8.1@8176x5616 30.0@4080x2808 8.1@7408x5556 33.0@4088x2808 10.4@8176x4320 34.7@4096x2160 62.5@2048x1080 86.5@1344x720	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~15s
HPS3CMOS45000CB	45M/IMX492[C] 1.4" (18.93x13.00)	2.315x2.315	108mv with 1/30s 0.03mv with 1/30s	8.1@8176x5616(C) 30.0@4080x2808(M) 8.1@7408x5556(C) 33.0@3696x2778(M) 10.4@8176x4320(C) 34.7@4096x2160(M) 62.5@2048x1080(M) 86.5@1344x720(M)	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~15s
HPS3CMOS32000CA	32M/IMX294[C] 1.15" (12.96x12.96)	2.315x2.315	108mv with 1/30s 0.03mv with 1/30s	8.1@5600x5600 30.0@2800x2800 30.0@1400x1400	1x1 2x2 4x4	0.1ms~15s
HPS3CMOS25000CA	25M/IMX511[C] 1/2.3 " (5.519x5.519)	1.12x1.12	96.3mv with 1/30s 0.1mv with 1/30s	12@4928x4928 46@2464x2464 100@1648x1648	1x1 2x2 3x3	0.013ms~15s
HPS3CMOS21000CA	21M/IMX269[C] 4/3 "(17.4x13.0)	3.3 x3.3	399mv with 1/30s 0.1mv with 1/30s	17@5280x3954 17@3952x3952 56@2640x1976 67@1760x1316 192@584x438	1x1 1x1 2x2 3x3 9x9	0.1ms~15s
HPS3CMOS20400CA	20.4M/IMX541[C] 1.1 "(12.32x12.32)	2.74 x2.74	1574mv with 1/30s 0.15mv with 1/30s	17.5@4496x4496 64.4@2240x2240 64.4@1120x1120	1x1 2x2 4x4	0.03ms~15s

C: Color, GS: Global Shutter

Model No.	Sensor & Size(mm)	Pixel(µm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure
HPS3CMOS20000CA	20M/IMX183[C] 1 "(13.06x8.76)	2.4 x2.4	462mv with 1/30s 0.21mv with 1/30s	15@5440x3648 50@2736x1824 60@1824x1216	1x1 2x2 3x3	0.1ms~15s
HPS3CMOS20000CC	20M/IMX183[C] 1 "(13.06x8.76)	2.4 x2.4	462mv with 1/30s 0.21mv with 1/30s	20@5440x3648 48@2736x1824 58@1824x1216	1x1 2x2 3x3	0.1ms~15s
HPS3CMOS18000CA	18M/SONY Special[C] 1/2.2 "(5.86x4.46)	1.2 x1.2	130mv with 1/30s 0.1mv with 1/30s	17@4880x3720 40@2448x1836 50@1728x1296	1x1 2x2 3x3	0.1ms~15s
HPS3CMOS15600CA	15.6M/SONY Special [C]1.1 "(13.0x13.0)	3.3 x3.3	399mv with 1/30s 0.1mv with 1/30s	17@3952x3952 56@1976x1976 67@1316x1316	1x1 2x2 3x3	0.1ms~15s
HPS3CMOS12400CA	12.4M/IMX545 [C,GS] 1/1.1"(11.22x8.22)	2.74 x2.74	1337mv with 1/30s 0.15mv with 1/30s	28.2@4096x3000 100.9@2048x1500 100.9@1024x750	1x1 2x2 4x4	0.03ms~15s
HPS3CMOS12300CA	12.3M/IMX304[C,GS] 1.1"(14.13x10.35)	3.45x3.45	1146mv with 1/30s 0.1mv with 1/30s	23.4@4096x3000 46.3@2048x1500	1x1 1x1	0.244ms~15s
HPS3CMOS12000CA	12M/IMX226[C] 1/1.7"(7.40x5.55)	1.85x1.85	280mv with 1/30s 0.1mv with 1/30s	25@4000x3000 50@2048x1080	1x1 2x2	0.1ms~15s
HPS3CMOS12000CB	12M/IMX577[C] 1/2"(6.29x4.71)	1.55x1.55	250mv with 1/30s 0.25mv with 1/30s	30@4056x3040 60@2028x1520 120@1014x760	1x1 2x2 4x4	0.1ms~5s
HPS3CMOS12000CC	12M/IMX676[C] 1/1.6"(7.07x7.07)	2.0x2.0	3637mv with 12 bit converted value (HCG) 0.15mv with 1/30s	27@3536x3536 60@1768x1768	1x1 2x2	0.013ms~15s
HPS3CMOS9000CA	9.0M/IMX305[C,GS] 1" (14.13x7.45)	3.45x3.45	1146mv with 1/30s 0.15mv with 1/30s	34@4096x2160 60@2048x1080	1x1 1x1	0.1ms~15s
HPS3CMOS8300CB	8.3M/IMX334[C] 1/1.8"(7.68x4.32)	2.0x2.0	505mv with 1/30s 0.1mv with 1/30s	35@3840x2160 60@1920x1080	1x1 2x2	0.02ms~15s
HPS3CMOS8300CD	8.3M/IMX585[C] 1/1.2"(11.14x6.26)	2.9x2.9	5970(mV/lx/s) 0.13mv with 1/30s	45@3840x2160 70@1920x1080	1x1 2x2	0.02ms~15s
HPS3CMOS8300CE	8.3M/IMX678[C] 1/1.8"(7.68x4.32)	2.0x2.0	3541(mV/lx/s) 0.15mv with 1/30s	45@3840x2160 70@1920x1080	1x1 2x2	0.02ms~15s
HPS3CMOS8000CA	8.0M/IMX294[C] 1.15 "(13.00x13.00)	4.63 x4.63	419mv with 1/30s 0.12mv with 1/30s	30@2808x2808(14bit) 139@1392x1392 139@696x696	1x1 2x2 4x4	0.1ms~15s
HPS3CMOS6300CA	6.3M/IMX178[C] 1/1.8" (7.37x4.92)	2.4x2.4	425mv with 1/30s 0.15mv with 1/30s	30@3072 x2048 38@1536x 1024	1x1 2x2	0.02ms~15s
HPS3CMOS6300CB	6.3M/IMX178[C] 1/1.8" (7.37x4.92)	2.4x2.4	425mv with 1/30s 0.15mv with 1/30s	59@3072 x2048 59@1536x 1024	1x1 2x2	0.02ms~15s
HPS3CMOS5100CA	5.1M/IMX547[C] 1/1.8" (6.71x5.61)	2.74x2.74	1337mv with 1/30s 0.15mv with 1/30s	63@2448x2048 208.4@1224x1024	1x1 2x2	0.03ms~15s
HPS3CMOS5000CA	5.0M/IMX264[C,GS] 2/3" (8.45x7.07)	3.45x3.45	1146mv with 1/30s 0.15mv with 1/30s	35@2448x2048 50@1224x1024	1x1 1x1	0.1ms~15s
HPS3CMOS3100CA	3.1M/IMX265[C,GS] 1/1.8" (7.07x5.30)	3.45x3.45	1146mvwith 1/30s 0.15mv with 1/30s	53@2048x1536 85@1024x768	1x1 1x1	0.1ms~15s
HPS3CMOS3100CB	3.1M/IMX123[C] 1/2.8" (5.12x3.84)	2.5x2.5	600mv with 1/30s 0.15mv with 1/30s	50@2048x1536 50@1920x1080	1x1 1x1	0.1ms~15s
HPS3CMOS2100CA	2.1M/IMX482[C] 1/1.2"(11.14x6.26)	5.8x5.8	8935mv with 1/30s 0.6mv with 1/30s	96@1920x1080	1x1	14us~15s
HPS3CMOS2000CA	2M/IMX385[C] 1/2"(7.2x4.05)	3.75x3.75	2350mv with 1/30s 0.15mv with 1/30s	125@1920x1080	1x1	0.1ms~15s
HPS3CMOS1500CA	1.5M/IMX273[C,GS] 1/2.9"(4.968X3.726)	3.45X3.45	1146mvwith 1/30s 0.15mv with 1/30s	164@1440x1080 320@720x540	1x1 2x2	0.1ms~15s

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);
ADC	8 Bit / 14 Bit
Recording System	Still Picture and Movie
Cooling System*	Natural

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

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

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)

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