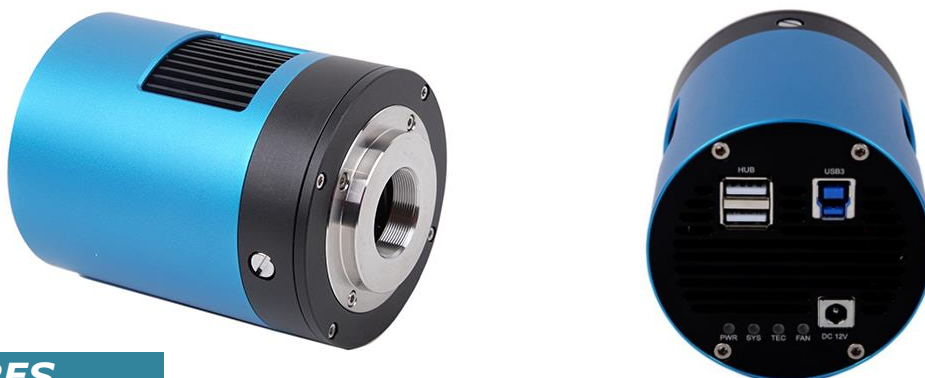


### INTRODUCTION

The Thermo Electric Cooled ACUCAMTEC series cameras can be widely used in low light environment and microscope fluorescence image capture and analysis, as well as the astronomy deep sky application.

**With the two-stage Peltier cooling sensor chip Sensor chip cooling up to 45°C below ambient temperature / camera body temperature for enhanced performance in challenging environments.** This will greatly increase the signal to noise ratio and decrease the image noise. Smart structure is designed to assure the heat radiation efficiency and avoid the moisture problem. Electric fan is used to increase the heat radiation speed.

ACUCAL Microscopy cameras are particularly remarkable for their fast live images, short reaction times, high resolution and clear contrast. And they are compatible with almost all microscopes. Our product range covers digital Microscope Cameras with intuitive software for archiving, measurement, analysis and presentation. 100% reproducibility of the exposures and highly convenient remote control of the cameras and ensure a fast and economical workflow.



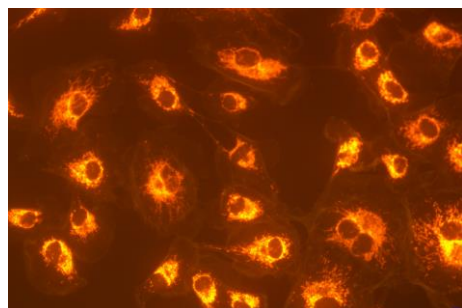
### FEATURES

- Standard C-mount SONY Exmor CMOS Sensor Digital Color Camera optimal performance in various lighting conditions.
- Two-stage TE Thermoelectric cooling with controllable electric fan.
- 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.
- Up to 3600 sec long time exposure.
- USB3.0 5Gbit/second interface ensuring high speed data transmission for attaching camera to desktop/ through single wire with suitable C/CS-mount camera adapter for rapid image download offering versatile lens compatibility, catering to different imaging requirements.
- Ultra-Fine™ color engine with perfect color reproduction capability & camera delivers excellent performance across different wavelengths.
- Quantum efficiency of up to 80% ensures efficient light capture, while minimal dark noise (<0.05e-/Px/Sec) and readout noise (~6 electrons at 10 MHz) contribute to clean image acquisition.
- No compression, no interpolation.
- Support still image capture(JPEG, BMP, TIFF, PNG, TGA, TIF, DICOM) & Video Recording.
- Plug-to-use, suitable for imaging of any standard Biological, Stereo and Metallurgical microscopes for observations, such as bright field, DIC, phase contrast and fluorescence.
- Ease of operation; only take 5 minutes to master the friendly software.
- Standard C-Mount makes connection to any microscope easy.
- With advanced video & image processing application including still picture and movie recording, various capture/control APIs such as Native C/C++, C#, Directshow, Twain, and Labview.
- Windows XP/Vista/7/8/10/11, /Linux/macOS/Android multiple platform SDK.
- Camera features white balance adjustment options, including ROI white balance and manual temp-tint adjustment, ensuring accurate color reproduction.

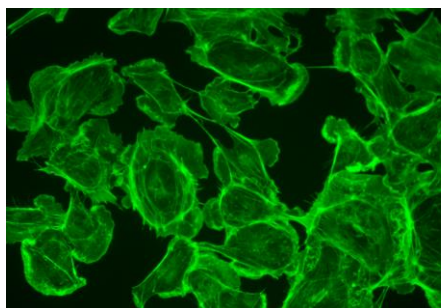


#### SPECIFICATION

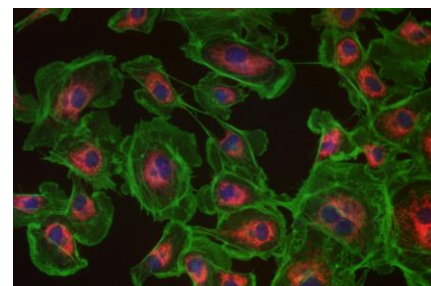
Parameter	ACUCAMTEC-1.7MP	ACUCAMTEC-20MP
Image Sensor	1.1" color CMOS (1.7 megapixel)	1" color CMOS (13.06 x 8.755 mm) 20 megapixel)
Frame Rate	33 fps at 1600 X 1100	19 fps at 5440 X 3648 30 fps at 4096 X 2160 48.8 fps at 2736 X 1824 60 fps at 1824 X 1216
Max. Resolution	1600 X 1100 (1.7M Pixels)	5440 X 3648 (20M Pixels)
Pixel Size	9.0 $\mu\text{m}$ x 9.0 $\mu\text{m}$	2.4 $\mu\text{m}$ x 2.4 $\mu\text{m}$
Signal/Noise	40.5 dB	40.5 dB
Dynamic Range	66.5 dB	2000:1, 72dB
Digital Output	8 and 16-bit	8 and 12-bit
A/D Conversion	12 bit	16 bit
Read Noise	8 e- rms	8 e- rms
Binning	1x1	1x1, 2x2, 3x3,4x4
G Sensitivity	0.49V/lux-sec 550nm	462Mv with 1/30sec
Dark Signal	0.3mv	0.21mv
Spectral Response (IR Filter)	380-650 nm	380-720 nm
Scan Mode	Progressive Scan	Progressive Scan
Power Requirement	PC USB bus power DC 5V $\pm$ 5% & external power adapter for the cooling system (DC12V, 3A)	PC USB bus power DC 5V $\pm$ 5% & external power adapter for the cooling system (DC12V, 3A)
Operating Temperature	-10° C to +50° C	-10° C to +50° C
Operating Humidity	5%-100%, Non-condensing	5%-100%, Non-condensing
Full well capacity	12000e	12000e
Storage Temperature	-20° C to +60° C	-20° C to +60° C
Exposure Time	0.1 ms to 1hr	0.1 ms to 1hr
Exposure Control	Automatic / Manual	Automatic / Manual
White Balance	Automatic / Manual	Automatic / Manual
Gain Programmable & Data Interface	Interface Connector Standard USB 3.0 high-speed interface.	Interface Connector Standard USB 3.0 high-speed interface.
Shutter	Electronic Rolling	Electronic Rolling



Red Fluorescent Image



Green Fluorescent Image



Fused Fluorescent Image

**ACUCAL SERVICES**  
901A/6 , Ashok Vihar  
Ambala City-134003

Web: [www.acucalservices.com](http://www.acucalservices.com)

