

SBIG® ALUMA® AC-SERIES ADVANCED sCMOS DETECTOR

A HIGHER STANDARD IN SCIENTIFIC CMOS CAMERAS

The SBIG ALUMA AC4040 is the perfect research-grade camera for telescopes from 0.4m to over 1.0m in size due to its large 52mm diagonal. The SBIG ALUMA AC4040 features a high performance 4096x4096 CMOS image sensor with 9µm pixels, 36.8mm on a side. The Front-Side Illuminated version has a peak quantum efficiency (QE) of >74% and the Back-Side Illuminated version peak QE >95%, higher than traditional KAF-16803 CCDs cameras.

SBIG StackPro™ in-camera image stacking combines high-gain sub-exposures into long duration images, emulating CCD behavior and reducing glow from logic on-sensor. This saves disk storage, reduces data transfer, and simplifies the calibration process. You are in control, and optimize operation for your science objectives.



The SBIG ALUMA AC-series is the latest in high-performance scientific imaging cameras, featuring sCMOS (scientific Complementary Metal Oxide Semiconductor) Active Pixel Sensor technology as the primary detector. The advanced ALUMA® architecture features an on-board processor, custom logic, and field-upgradable firmware. It shares the same high-performance cooling that has been an SBIG standard for years. It generates less heat and consumes less power than competing cameras due to the highly efficient cooling stack and advanced electronics. Of course, like most large SBIG cameras, the new ALUMA AC-series features a mechanical shutter for easy dark frames, and electronic shutter for precise exposure control.

ACHIEVE YOUR VISION

The Aluma AC sCMOS cameras feature:

Monochrome advanced scientific CMOS sensor	Large size, low noise, state-of-the-art sCMOS APS device
Electromechanical dark shutter	Convenient dark and bias frames, ideal for robotic automation
Sub-zero thermoelectric cooling	~35°C below ambient without cryogenics using SBIG pin-based heatsink. Liquid cooling ports are included, although not necessary.
USB 3.0 interface and USB 2.0 compatible for longer cables	Works with standard PCs, no specialized interface cards
High dynamic range - Dual gain ADC	12-bit low gain plus 12-bit high gain for maximum dynamic range
Auxiliary control port	External trigger and control of optional filter wheel
ASCOS Standard and DL Imaging drivers and Software Development Kit available	Windows 10 and 11 compatible ASCOS Driver Included Contact us for other platforms

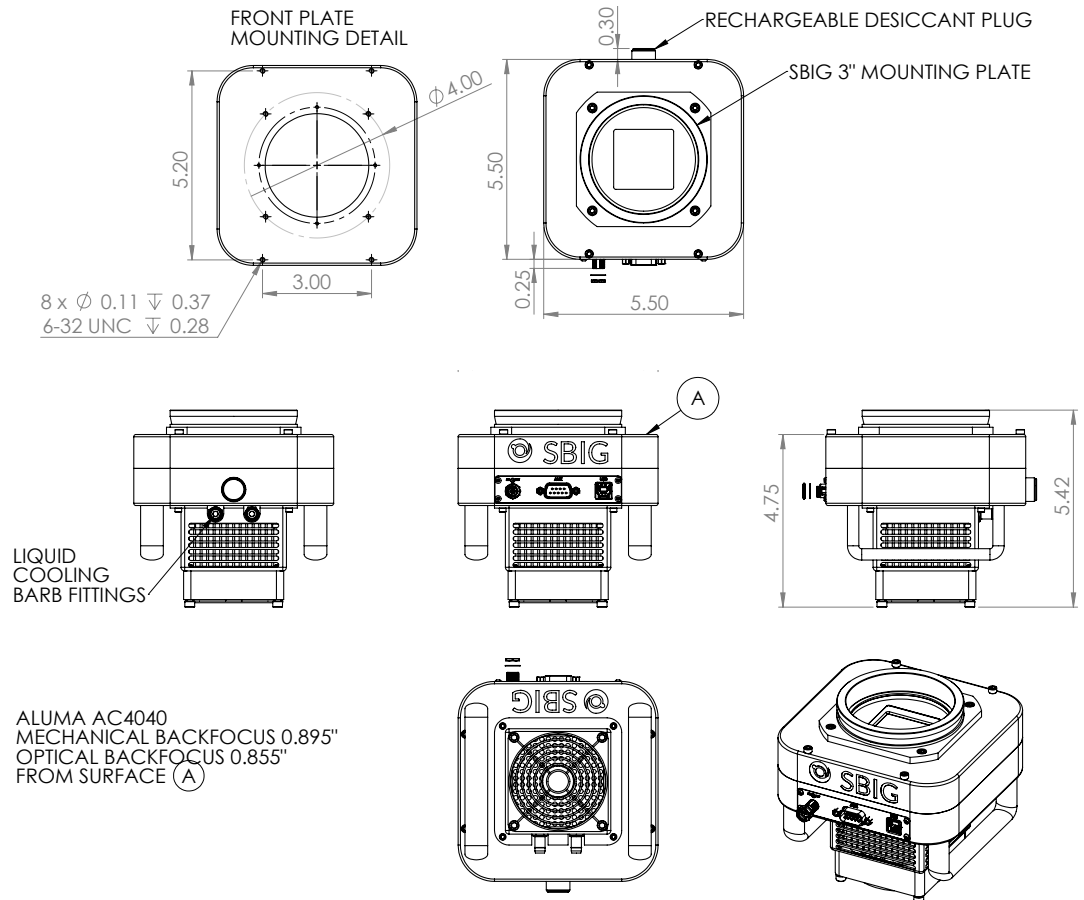
TECHNICAL SPECIFICATIONS

Active pixels	4096 x 4096
ADC resolution	12-bit HDR dual gain
Binning	1x1 (BSI), 1x1 and 2x2 (FSI)
Dark current	0.3 e-/p/s at 0°C
Full well capacity	~39 000e ⁻ (BSI) , ~74 000e ⁻ (FSI)
Illumination	Front or Back Side options available
Peak quantum efficiency	74% (FSI), 95% (BSI)
Pixel size	9.0 µm
Read noise	~ 3.7 e ⁻
SBIG model name	ALUMA AC4040
Sensor	Gpixel GSENSE4040
Sensor diagonal	52.0 mm
Sensor dimensions	36.8 x 36.8 mm
Shutter	Rolling and dual blade dark shutter

OPTIONAL ACCESSORIES

Filter Wheels: with 7- or 10-position carousels
Mechanical adapters: 3" threaded, 3" barrel, or custom
Off-axis guiding camera: SBIG StarChaser SC-3
Optical filters: 50mm square, 2mm thick
Spare molecular desiccant cartridge: DESICCANT-STX-STL

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ORDER THE SBIG SCIENTIFIC CAMERA OF YOUR DREAMS THIS YEAR FROM OUR WORLDWIDE NETWORK OF DEALERS

Specifications subject to change without notice – December 2022

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