SBIG® ALUMA® AC4040-SERIES ADVANCED sCMOS APS DETECTOR

A HIGHER STANDARD IN SCIENTIFIC CMOS CAMERAS

DIFFRACTION
ASTRONOMY + SCIENTIFIC IMAGING SOLUTIONS

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 Scientific CMOS Active Pixel 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 has a peak QE of>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 calibration. You are in control and optimize operations 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 onboard 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 an electronic shutter for precise exposure control.

ASCOM

The Aluma AC sCMOS cameras feature:

Monochrome advanced scientific CMOS sensor	Large size, low noise, state-of-the-art sCMOS Active Pixel Sensor 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 standard, in case of high ambient temperatures 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 gainfor maximum dynamic range
Auxiliary control port	External trigger and control of optional filter wheel
ASCOM Standard and DL Imaging drivers and Software Development Kit available	Windows 10 and 11 compatible ASCOM Driver Included Contact us for other platforms

Specifications subject to change without notice – January 2024

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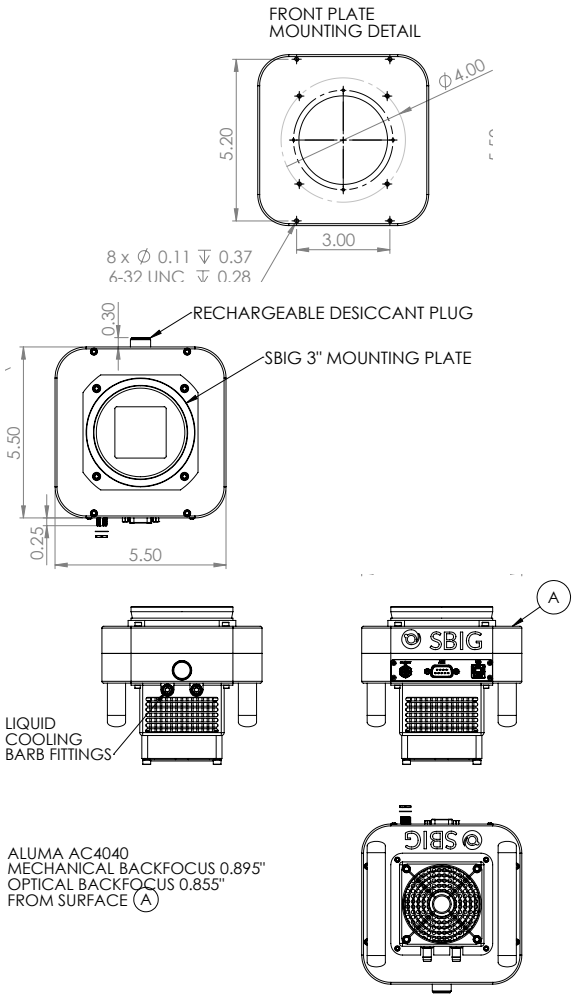
TECHNICAL SPECIFICATIONS

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) , ~70 000e⁻ (FSI)
Illumination	Front or Back Side options available
Peak quantum efficiency	95% (BSI), 74% (FSI)
Pixel size	9.0 µm
Read noise	~ 3.7 e-
Sensor	Gpixel GSENSE4040
Sensor diagonal	52.0 mm
Sensor dimensions	36.8 x 36.8 mm
Shutter	Dual blade mechanical dark shutter On-sensor electronic rolling shutter

OPTIONAL ACCESSORIES

Model	Description
ACC20*	Single filter holder
AFW-10-50SQ*	Ten position carousel, <= 3mm thick filters
AFW-10-50ST*	Ten position carousel <= 5mm thick filters
AFW-DUAL-KIT	Stacks two filter wheels for 18 total slots
SC-4	StarChaser SC-4 off-axis guide camera
ACC09	Nosepiece for 3-inch draw tube
10018	Aadapter for 3-inch x 24tpi thread

**Fits 50mm square unmounted glass filter(s)*



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www.diffractionlimited.com/product/aluma-ac4040

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