

SBIG® ALUMA® AC-SERIES ADVANCED CMOS 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. It has a peak quantum efficiency (QE) of >74%, higher than traditional KAF-16803 CCDs cameras.

The SBIG Aluma AC-series is the latest in high-performance scientific imaging cameras, featuring CMOS (complementary metal oxide semiconductor) 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.



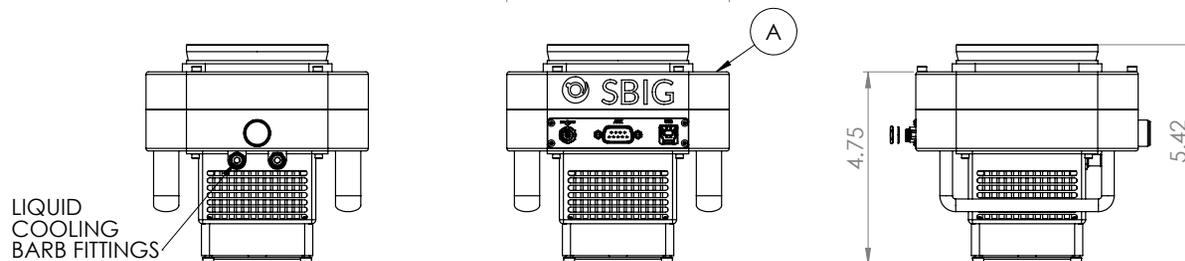
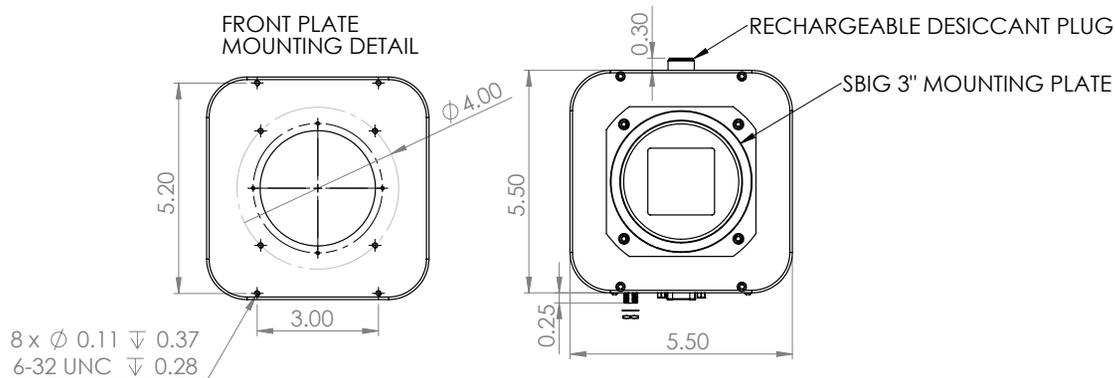
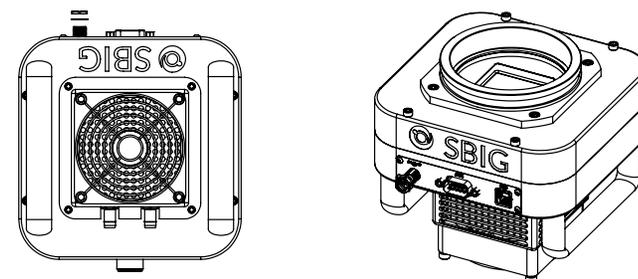
FEATURES AND BENEFITS

The Aluma CMOS cameras feature:

Monochrome advanced scientific CMOS sensor	Large size low noise state-of-the-art CMOS device
Electromechanical dark shutter	Convenient dark and bias frames, ideal for robotic automation
Sub-zero thermoelectric cooling	$\Delta T > 35^{\circ}\text{C}$ below ambient without cryogenics using SBIG pin-based heatsink. Liquid cooling ports are included, although not necessary.
USB 3.0 interface	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
DL Imaging drivers and multi-platform SDK	Support for Window® 7 through 10, MacOS® 10.14, and Canonical® Ubuntu Linux 18.04 LTS. ASCOM driver included for Windows.
Cyanogen Imaging® MaxIm LT Imaging software	Get up and running immediately with the included image acquisition and processing software. Upgradable to MaxIm DL Pro for robotic automation, telescope and observatory control.

TECHNICAL SPECIFICATIONS

SBIG model name	Aluma AC4040
Sensor	Gpixel GSENSE4040
Illumination	Front
Peak quantum efficiency	74%
Shutter	Rolling and dual blade dark shutter
Active pixels	4096 x 4096
Pixel size (µm)	9.0
Sensor dimensions (mm)	36.8 x 36.8
Sensor diagonal (mm)	52.0
Dark current (e-/p/s)	0.3 at 0°C
Full well capacity (e-)	74 000
Read noise (e-)	~ 3.7
ADC resolution	12-bit HDR dual gain

OPTIONAL ACCESSORIES
Adaptive optics unit: AO-X
Off-axis guiding camera: SBIG StarChaser SC-3
Filter wheel: FW7-STX with 7-position carousel
Optical filters: 50mm Square, 2mm thick
Spare molecular desiccant cartridge: DESICCANT-STX-STL
Mechanical adapters: 3-inch or custom-fabricated

ALUMA AC4040
MECHANICAL BACKFOCUS 0.895"
OPTICAL BACKFOCUS 0.855"
FROM SURFACE (A)

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