

# SBIG® ALUMA® AC461

A RESEARCH GRADE, HIGH PERFORMANCE  
102 MEGAPIXEL SCIENTIFIC IMAGING CAMERA



## A large, high quality CMOS Active Pixel Sensor detector for Astronomy and Space Domain Awareness

Built in our ISO 9001:2015 quality certified North American facility, this camera uses the high-reliability IMX461 CMOS active pixel sensor. Backed by our industry-leading warranty, you can be assured that this camera will provide reliable performance over a long lifetime. Our user-rechargeable desiccant system ensures long-term frost-free operation without the need for periodically returning the camera for service.

The IMX461 sensor features extremely high quantum efficiency and very low read noise. It produces low-noise 16-bit images with high dynamic range. It covers an effective image area of approximately 44 mm x 33 mm with 3.76 micron square pixels, resulting in high resolution 102 megapixel images.

Due to the large 55mm image diagonal, it is best suited to telescopes with a large flat field and 3-inch (76mm) inner diameter focuser draw tube.

The Aluma AC461 is compatible with an optional filter wheel for 3mm thick x 65mm square filters. A filter position can be used as a dark shutter.

For the utmost in reliability and speed, the Aluma AC461 features a 10 gigabit-per-second Ethernet interface utilizing SFP+ fiber. This allows the camera to download a full 102 megapixel, 16-bit image in a fraction of a second. While cameras based on USB 3.0 are limited to a cable length of just 2-3 metres, the Aluma AC461 can readily operate over 30m long cables.

## The Aluma AC461 camera features:

<b>Extremely High Sensitivity and Dynamic Range</b>	Large size, low noise, state-of-the-art sCMOS APS device
<b>Electronic Shutter</b>	On-sensor rolling shutter. Optional filter wheel with dark position for automatic bias and dark frames below ambient.
<b>Powerful SmartCooling™ Technology</b>	Air cooled to ~35°C below ambient Optional liquid cooling
<b>SFP+ Fiber Ethernet Interface</b>	SFP+ provides high speed 10Gb Ethernet, and supports much greater distances and immunity to noise than USB. Optional PC interface adapters are available.
<b>User Rechargeable Desiccant</b>	Customer maintenance without camera disassembly
<b>I2C Aux Port</b>	External trigger and control of optional filter wheel
<b>Monochrome Sensor</b>	Filter Wheel or Single filter holder
<b>Operating System</b>	Windows 11 DL Imaging Driver for MaxIm LT ASCOM Driver optional

**TECHNICAL SPECIFICATIONS\***

Exposure	0.00016 – 3,600 sec
OS Compatibility	Windows 11, contact us for others
Full Frame Download	Less than 1 second
Weight	4.6 lbs / 2.1 kg
Recommended Filter Size	65mm Square
Read Noise (typ)	<1.5 e- typical (at gain 3x)
Temperature Regulation	Yes
Computer Interface	SFP+ 10 Gbps Fiber Ethernet
Power	12 VDC 8A
Cooling Delta	~ 35C from ambient
A/D Converter	16 bits
Dark Current e-/p/s	Approx 0.01 e-/pixel/sec @ 0C
Full Well Capacity	51,000 e- typical
Sensor Size	44 mm x 33 mm
Imaging / Pixel Array	11674 x 8750
Shutter	Rolling Shutter, optional mechanical shutter via filter wheel
Self-Guiding In Front of Filters	No
Pixel Size	3.76 um
Total Pixels	102 million
Imaging Sensor	SONY IMX461

**OPTIONAL ACCESSORIES**

Filter Wheel	For 3mm thick filters (65mm square)
	Dark Shutter Filter (65mm Square)
ATU-1	Aluma Timing Unit - GPS Locked Precision Timing Controller for Advanced Firmware cameras
ACC09	Nosepiece for 3-inch draw tube
10018	Adapter for 3-inch x 24tpi thread
DESICCANT-STX-STL	Molecular sieve desiccant cartridge
OM3	Fiber Optic Cable – OM305 (0.5m), OM330 (3m), OM360 (5m)
OM3TR	Fiber Optic Transceiver Pair, Industrial temperature range (One for each end of the cable)
ETHPCI	10Gb Ethernet Adapter for PCIe slot
ETHTHU	Thunderbolt 3/4 adapter
ETHCOP	RJ-45 Copper Format Converter

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