

# SBIG® ALUMA® AC455

A RESEARCH GRADE, HIGH PERFORMANCE  
61 MEGAPIXEL SCIENTIFIC IMAGING CAMERA.



Built in our ISO 9001:2015 quality certified North American facility, this camera uses the high-reliability industrial-grade IMX455 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 IMX455 sensor features extremely high quantum efficiency, and produces low-noise 16-bit images with high dynamic range. It covers an image area of 36mm x 24mm with 3.76 micron square pixels, resulting in high resolution 61 megapixel images.

For the utmost in reliability and speed, the Aluma AC455 features a 10 gigabit-per-second Ethernet interface utilizing SFP+ fiber. This allows the camera to download a full 61 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 meters, the Aluma AC455 can readily operate over cables as long as 300 m (1000 ft).

The Aluma AC455 is fully compatible with our ten position AFW-10-50SQ filter wheel (50mm square filters) or AFW-12-50R (50mm round), the ultra-thin StarChaser SC-4 autoguider, and the SBIG AO-X adaptive optics unit. This combination provides the minimum back-focus requirement for an AO-guided system.

Two versions are available: Aluma AC455M with monochrome sensor, and Aluma AC455C with color sensor.



## The Aluma AC455 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 AFW filter wheel with position for automatic bias and dark frames below ambient.
<b>Powerful SmartCooling™ Technology</b>	Air cooled to ~35°C below ambient
<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 or Single-Shot Color Option</b>	Filter Wheel or Single filter holder
<b>Operating System</b>	Windows 10 and 11 ASCOM Driver Included

**TECHNICAL SPECIFICATIONS\***

Exposure	0.00016 – 3,600 sec
OS Compatibility	Windows 10 and 11
Full Frame Download	0.25 sec sensor readout, 0.26 sec download to PC
Weight	3.5 lbs / 1.6 kg
Recommended Filter Size	50mm Square
Read Noise (typ)	2.1 e <sup>-</sup> typical
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 <sup>-</sup> /p/s	< 0.01 e <sup>-</sup> /pixel/sec
Full Well Capacity	51,000 e <sup>-</sup> typical
Sensor Size	36 mm x 24 mm
Imaging / Pixel Array	9576 x 6388
Shutter	Rolling Shutter, optional mechanical shutter via AFW filter wheel
Self-Guiding In Front of Filters	Yes with StarChaser SC-4
Pixel Size	3.76 um
Total Pixels	61 million
Imaging Sensor	SONY IMX455
Guiding Option	StarChaser SC-4

**OPTIONAL ACCESSORIES**

AFW-10-50SQ	10-position filter wheel (50mm square)
AFW-12-50R	12-position filter wheel (50mm round)
ACC20	Single Filter Holder (50mm square)
SC-4	StarChaser off-axis guide camera
ACC09	Nosepiece for 3-inch draw tube
10018	Adapter for 3-inch x 24tpi thread
DESICCANT-STX-STL	Molecular sieve desiccant cartridge
ACC23	Dark Shutter Filter (50mm Square)
ACC11	Dark Shutter Filter (50mm Round)
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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