

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 41 mm x 31 mm 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:

Extremely High Sensitivity and Dynamic Range

Large size, low noise, state-of-the-art sCMOS APS device

Electronic Shutter

On-sensor rolling shutter. Optional AFW filter wheel with position for automatic bias and dark frames below ambient.

Powerful SmartCooling™ Technology

Air cooled to ~35°C below ambient

SFP+ Fiber Ethernet Interface

SFP+ provides high speed 10Gb Ethernet, and supports much greater distances and immunity to noise than USB. Optional PC interface adapters are available.

User Rechargeable Desiccant

Customer maintenance without camera disassembly

I2C Aux Port

External trigger and control of optional filter wheel

Monochrome or Single-Shot Color Option

Filter Wheel or Single filter holder

Operating System

Windows 10 and 11
ASCOM Driver Included

TECHNICAL SPECIFICATIONS*

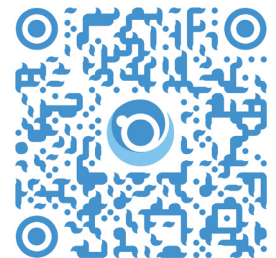
Exposure	0.00016 – 3,600 sec
OS Compatibility	Windows 10 and 11
Full Frame Download	0.25 sec sensor readout, 0.26 sec download to PC
Weight	3.5 lbs / 1.6 kg
Recommended Filter Size	50mm Square
Read Noise (typ)	2.1 e ⁻ typical
Temperature Regulation	Yes
Computer Interface	SFP+ 10 Gbps Fiber Ethernet
Power	12 VDC 8A
Cooling Delta	~ 35C from ambient
A/D Converter	16 bits
Dark Current e ⁻ /p/s	< 0.01 e ⁻ /pixel/sec
Full Well Capacity	51,000 e ⁻ 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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