SBIG® Advanced Filter Wheel AFW-12-65SQ

DUAL CAROUSEL FOR 65MM SQUARE FILTERS FOR ALUMA AC461 LARGE DETECTOR

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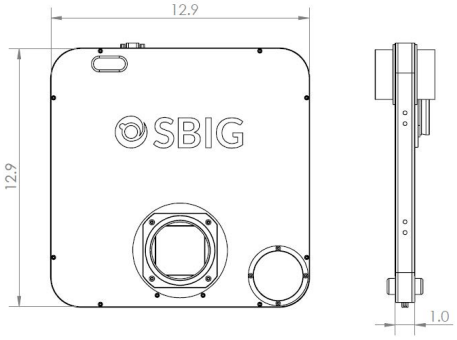

This high speed, bidirectional, dual carousel filter wheel with twelve positions is designed for large detectors used by professionals like you in diverse fields such as Astronomy and Space Domain Awareness.

With twin carousels, this large filter wheel has six positions per wheel for 65mm square filters (typically 3mm thick). Typically one position holds a solid blank for use as a dark shutter, and a clear or empty position should be reserved in each carousel. Software treats the dual carousels as a single wheel, allowing combinations of slots. For example, filters can be stacked combining UBVRI photometric filters in the first carousel with Neutral Density filters in the second wheel to allow for bright star photometry. Alternatively, UBVRI + Empty slot AND Ha, SII, OII + Exoplanet + Dark + Empty allow great flexibility.

Like our large Aluma AC461 camera, the Advanced Filter Wheel is manufactured in our ISO 9001:2015 quality certified facility in North America. Based on our proven high speed, bidirectional AFW series filter wheels, this remarkable large filter wheel combines dual motors, controls, drive and carousels in a package that adds only 1-inch (25mm) of mechanical back-focus. A single cable from the Aluma AC461 camera provides power and control without the need for extra wiring.

Backed by our industry-leading warranty, you can trust that the AFW-12-65SQ filter wheel will provide reliable performance over a long lifetime.

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

The face includes four metric and four SAE threaded mounting holes to adapt to your telescope focuser. Mounting holes are also provided on three sides of the body to allow mounting on an optical bench or inside an instrument. The optional SBIG USB-to-Filter Wheel adapter can power and control this filter wheel when using third party cameras or in other applications.

Key features:

Large Capacity Holds 9 to 12 filters	Twin carousels hold up to 6 filters each. Recommend leaving one empty per carousel, one for dark shutter
Stacked Filters	Combine filters between two carousels as one logical filter for bright object photometry
Single Cable	Power and control over a single cable to the camera
Remarkably thin	Only one inch of mechanical backfocus is needed. Designed with two carousels and drive motors in opposite orientation, less optical distance is needed.
Filter Retainers	Remove the lids to install your filters using retainers instead of removing the carousels.
Standard SBIG Mount	Standard SBIG STX 4-inch bolt circle for #6-32 screws. Compatible with 3"x24 nose.
Metric Bolt Pattern	Alternative attachment via 110mm M4 bolt square for third party hardware
Software	Designed for Windows 11 with optional MaxIm LT or MaxIm DL Pro using DL Imaging Driver
Third Party Support	Optional USB-to-Filter Wheel Adapter Kit with ASCOM driver for Windows 11

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Recommend 1 dark shutter slot.

TECHNICAL SPECIFICATIONS*

Carousel Capacity	Two carousels with six positions
Configuration	Recommend 1 dark shutter slot. Recommend 1 empty/clear slot per carousel. For 9 filters.
Weight	7.5 lbs / 3.4 kg
Recommended Filter Size	65mm Square unmounted glass
Filter Thickness	3mm thick standard retainers Optional 1, 2, 4, or 5mm
Operating Temperature	-40C to +40C non-condensing
Interface	SBIG I2C with Power and Control
Power	12 VDC <1A typical
Cabling	Includes cable to SBIG camera
Dark Shutter Filter	Includes one 65mm solid plate
Position Sensing	Non-optical, no infrared LEDs
Maximum Sensor Size	55mm square (estimated)
Mechanical Back Focus	1 inch (25.4mm)
Overall Dimensions	12.9 x 12.9 x 3 inches (32.8 x 32.8 x 7.6cm) including motor covers
Self-Guiding In Front of Filters	No
Warranty	1 Year
Camera Compatibility	Aluma AC461

OPTIONAL ACCESSORIES

USB-to-FW Adapter Kit	For third party camera applications
ACC65	Extra Dark Shutter Filter blank (65mm square)
ACC09	Nosepiece for 3-inch draw tube
10018	Adapter for 3-inch x 24tpi thread
Filter Retainers	Specify filter thickness - 1, 2, 3, 4 or 5mm

Bottom view, Telescope focuser above

Front view, toward telescope

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https://diffractionlimited.com/product/sbig-afw-filter-wheels/

* Specifications subject to change without notice – October 2025

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