

SBIG® Advanced Filter Wheels

IDEAL COMPANION TO ASTRONOMY AND
GROUND-BASED DETECTORS



Whether you are an astronomer, physicist, observer, or are involved in orbital debris tracking, Diffraction Limited's line of SBIG Advanced Filter Wheels are stellar performers.

SBIG Advanced Filter Wheels include 3 high-capacity single-carousel versions, for SBIG Aluma AC4040 or AC455 detectors, SBIG Aluma CCD cameras, and certain third party cameras. A dual-carousel filter wheel for 65mm square filters fits the larger Aluma AC461 camera.

These high-speed, bi-directional, consistent-approach carousel motor systems quickly and accurately positions the filter in a matter of seconds. The ultra-slim design of the single-carousel versions minimize backfocus at 14mm / 0.55 inches for 1-3mm thick filters. The AFW Tall wheels handle 4-5mm thick filters and yet are super-slim at 19mm / 0.65 inches thick. A new bearing design ensures reliability and consistent operation.

Two single-carousel filter wheels can be stacked using the optional SBIG Dual Filter Wheel Kit, creating a single virtual filterwheel, allowing filters to be combined in pairs, or selected individually. This is ideal for brighter targets, space domain awareness, and high dynamic range photometry.

Model	Filter Positions	Filter Size & Shape	Filter Thickness
AFW-10-50SQ	10	50 mm Square	Up to 3mm
AFW-12-50R	12	50 mm Round	Up to 3mm
AFW-16-36R	16	36mm Round	Up to 3mm
AFW-10-50ST	10	50 mm Square	4mm or 5mm
AFW-12-50RT	12	50 mm Round	4mm or 5mm
AFW-16-36RT	16	50 mm Round	4mm or 5mm
AFW-12-65SQ	10	65 mm Square	Up to 3mm



The AFW-10-50SQ is recommended for use with our SBIG ALUMA AC4040, AC455 cameras, STX-series, or medium format detectors up to approximately 65mm diagonal.

The AFW-12-50R is recommended for our SBIG Aluma AC455 and ALUMA AC2020 cameras, STXL series, or 35mm full frame sized detectors.

The AFW-16-36R is recommended for use with SBIG ALUMA AC2020 cameras. It can also be used with AFW to Small Format Camera Adapter (ACC14) for SBIG Aluma CCD, STC-7, STC-428, and STF series cameras.

The AFW-12-65SQ is designed for use with the SBIG AC461 large detector.

Improved Filter Compatibility

In order to accommodate the most popular filter sizes, convenient spacers are included:

- 3 mm filters – do not use spacer
- 2 mm filters – align notches in spacer with mounting screws
- 1 mm filters – flip over spacer so notches face the filter
- If you require 4mm or 5mm thick filters, please order the "T" tall variant of the filter wheel, eg AFW-10-50ST

Easy Installation

The AFW series filter wheels are designed to be quickly installed onto the camera without removing the carousel.

Once the wheel is attached to the camera, a single cable is connected to the camera's AUX port. This single cable provides all necessary power and control functions.

** Third party cameras require the optional SBIG USB-to-Filter Wheel adapter kit and a mechanical adapter (not supplied). ASCOM device drivers are supplied.*

Dual Wheel Support

For those users requiring more filters, AFW series wheels include the ability to control two filter wheels. Currently this requires MaxIm LT or MaxIm DL Pro software.

A special adapter is used to stack two AFW series wheels. A matching three-port low profile cable is included to connect the two wheels to the camera's control port.

Our MaxIm LT and MaxIm DL Pro software allows you to configure "virtual" filter slots, that map to specific slots on wheel 1 and wheel 2. Usually one slot is left blank in each wheel, allowing you to select filters from one wheel or the other. It is also possible to arrange for two filters to be used per slot, depending on your requirements.

With one blank slot in each wheel, a pair of AFW-10-50SQ wheels allow you to use 18 filters. Similarly a pair of AFW-12-50R wheels will allow you to use 22 filters. Two AFW-16-36R will support 30 individual filters.

Third party detectors can use the USB-FW adapter kit to support dual wheel operation. ASCOM device drivers are included with the adapter kit.

The dual-carousel AFW-12-65SQ has 12 positions, and normally this would allow for 10 filters with a clear slot in each carousel. It is not available in a Tall configuration.

A dark-filter can be positioned in a slot and used as a mechanical shutter for taking dark frames with CMOS cameras like the AC455 and AC461.

StarChaser Autoguider and AO-X Compatibility

The Advanced Filter Wheel is compatible with the StarChaser SC-4 and optional AO-X tip/tilt Adaptive Optics unit.

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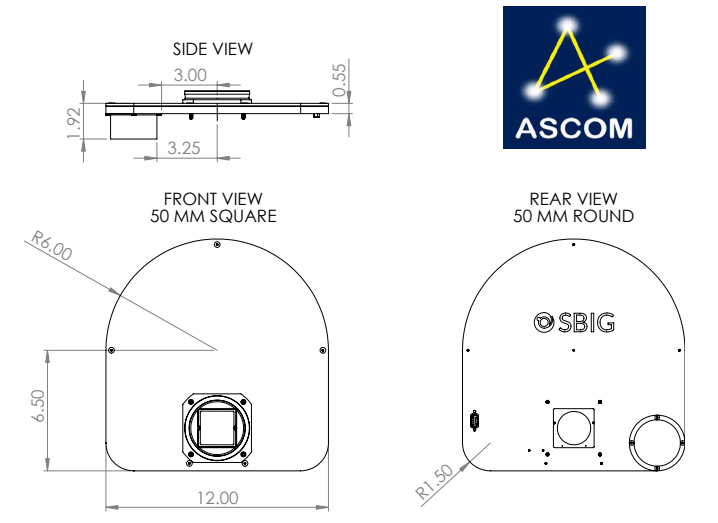
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TECHNICAL SPECIFICATIONS

Camera Interface	SBIG I2C Auxiliary Connection
Weight	4 lbs (1.8Kg) single; 7.5 lbs - AFW-12-65SQ
Filter Size	Unmounted 50mm square, 50mm round, 36mm round filters, 65 mm square
Filter Thickness	Standard model: 1-3mm holders; Tall model: 4-5mm holders
Mounting	Standard SBIG bolt pattern for 3-inch camera hardware

OPTIONAL ACCESSORIES

Model	Description
AFW-DUAL-KIT	Stack a pair of AFW filter wheels
USB-FW	USB to Filter Wheel Adapter Kit



Note: See AFW-12-65SQ data sheet for dimensions and detailed specifications.



www.diffractionlimited.com/product/sbig-afw-filter-wheels/