

Filter Wheels

Performance Microscopy

Performance

LEP designs all products for performance, versatility and reliability. The filter wheels are no exception.

The LEP filter wheels are driven by a powerful DC servo motor system that achieves high accuracy and performance. The precision technology senses the actual position of the wheel and dynamically corrects for any errors, lag or shift.

The MAC 6000 filter wheel module can accommodate two filter wheels and three shutters. The powerful software command set allows the filter wheel to be flexible and adaptable for almost any application. Along with the standard straightforward commands, the controller provides master or slave hardware triggering for the highest performance.

The high speed electronic shutter is a tuned system with precise timing that optimizes performance. The proprietary soft-open technology achieves high speed while minimizing vibrations and noise. The result is a shutter system that offers speed, low vibration and is rated up to 50 million cycles.



Emission and Excitation Applications

Excitation filter wheels are designed to control the illumination wavelength before it enters the microscope. The LEP six and ten position filter wheels offer the most flexibility, performance and reliability. The standard filter wheels can accept 25 and 32 mm diameter filters in any combination. The integral shutter is designed to easily withstand high temperatures and is rated for 50 million cycles. The high performance DC servo drive ensures repeatable and reliable filter positioning.

High Speed Shutter

The LEP electronic shutter is available as a separate component or integrated with most of the filter wheels. Designed for high reliability without sacrificing speed, the shutter is unaffected by the high heat from intense illumination sources. The single moving part in the shutter is rated to 50 million cycles.

A separate shutter-only controller is also available. This controller is capable of driving up to 4 shutters. Digital inputs and outputs are provided and can be setup by software command to synchronize the shutter with cameras and other acquisition devices via USB and RS-232 interface.

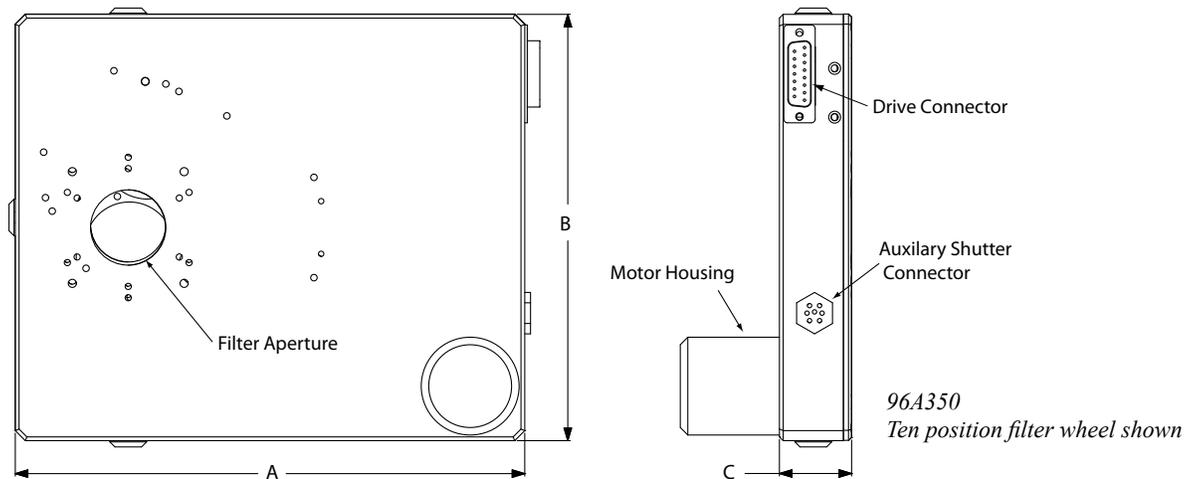
Dual Filter Wheel

The dual filter wheel can be used to gain additional filter positions or to add the flexibility to program combinations of filters. The dual filter wheel is available in either six or ten position versions, providing 10 to 18 unique filter positions. When used to combine filters, the bandpass excitation filter and neutral density filters can be programmed to control both the wavelength and intensity of the fluorescence illumination.

The dual wheels have the same features as the standard filter wheels: 25 or 32mm filter capability, integral electronic shutter and high reliability servo control.

- Microscope specific mounting flanges
- Electronic synchronization option
- Programmable shutter exposure
- Accepts 25 and 32 mm filters
- Integral electronic shutter
- Precision DC servo drive
- Six or ten positions

Physical Characteristics



Application	Part Number	Filters		Internal Shutter	Dimensions(mm)*			Weight	Adjacent Change
		Positions	Diam(mm)		A	B	C		
Single Filter Wheels with integral electronic shutter	96A350	10	25/32	YES	203	170	28.56	1.5kg	60ms
	96A354	6	25/32	YES	188	133	28.56	980g	50ms
Compact Wheels 25mm filters without shutter	96A351	6	25	NO	147	98	28.56	650g	50ms
	96A357	6	25 5° tilt	NO	147	98	28.56	650g	50ms
Dual Filter Wheels with high filter capacity, includes integral electronic shutter	96A355	2 x 10	25/32	YES	203	170	50.8	2.5kg	60ms
	96A356	2 x 6	25/32	YES	188	133	50.8	1.8kg	50ms

*excludes motor housing and mounting flange

Accessories

Mounting Flanges

The filter wheel becomes an integral part of the microscope optical system by inserting the filter wheel or shutter between the lamphouse and the microscope.



Operator Keypad

For manual operation and status indication the filter wheel keypad is an essential add-on. The keypad provides an easy means to switch filters. Operation of the keypad won't interfere with application software.



Filter Wheel Stand

The Filter Wheel Stand provides a rigid support for any LEP filter wheel independent of the microscope. This is especially useful for applications that are sensitive to vibrations.

