

C-Focus System

Features

- ▶ Microscope automatic focus drift correction
- ▶ Interchangeable, quick mount adapters
- ▶ 100 μm range of motion
- ▶ Compatible with all microscopes
- ▶ Closed loop control
- ▶ **pico**™ sensor technology

Typical Applications

- ▶ Maintain constant microscope focus
- ▶ High speed confocal imaging
- ▶ Ultra-fine focus adjustments

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C-Focus nanopositioner with 5nm optical sensor system removes the effects of microscope focus drift.



Easy to Use

Single button to maintain focus.

Single button to move lens into the starting position.

Compatible Software Packages



Examples, tutorial, and Nano-Route™ 3D supplied with Nano-Drive™ USB interfaces.

USB and analog motion control



Product Description

C-Focus systems provide an automatic means to eliminate microscope focus drift over long time periods. Unlike autofocus systems which require use of advanced microscopes with internal focus correction or external devices which track video signals or reflected laser beams, the C-Focus simply corrects for microscope focus drift by using a high resolution (5nm) sensor system to measure the lens/sample spacing and make the necessary adjustments. The C-Focus system has no effect on standard manual focusing and can be retrofit to any microscope. After focus is established, simply pushing the "focus lock" button starts the C-Focus operation. Objective lens motions are accomplished with a lens nanopositioner (the

Nano-F100) which is easily connected to the objective lens and microscope with standard threaded adapters. In addition to the unique C-Focus operation, lens nanopositioner motion can also be directly commanded by digital (16-bit USB) or analog signals and can be used for high speed, high resolution confocal imaging and other imaging tasks with demanding focus requirements. The C-Focus lens positioning system contains the same proprietary, low noise **pico**™ position sensors used in the Nano-F100 and is capable of sub-nanometer positioning resolution. The 16-bit USB digital computer interface is included with all C-Focus controllers.

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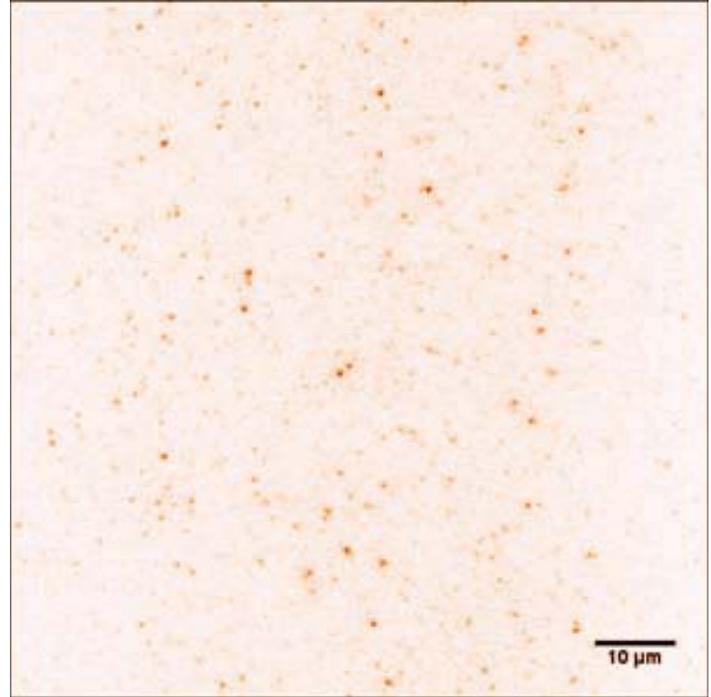
Technical Specifications

| | |
|----------------------------------|----------------------|
| Range of motion (Nano-F100)..... | 100 μm |
| Resolution..... | 0.2 nm |
| Resonant Frequency..... | 500 Hz \pm 20% |
| Stiffness..... | 1.0 N/ μm |
| Recommended max. load*..... | 0.5 kg |
| Body Material..... | Al and Brass |
| Controller..... | C-Focus |

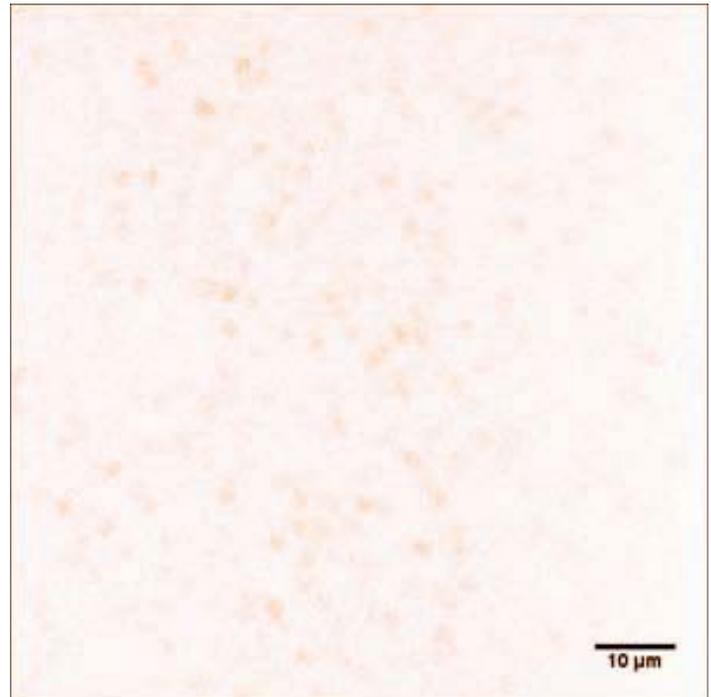
* Larger load requirements should be discussed with our engineering staff.



Nano-F100 objective lens nanopositioner is included with the C-Focus system. Microscope focus drift is corrected by moving the objective lens in response to feedback from the C-Focus sensor system.

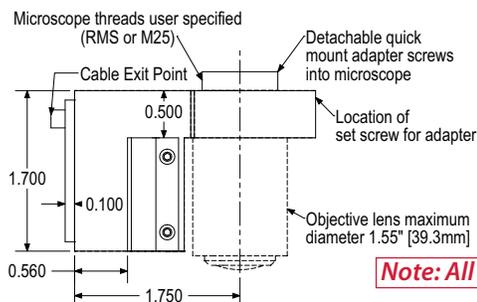
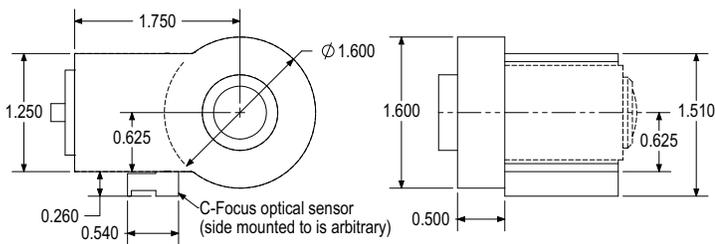


20 minute exposure without C-Focus.



20 minute exposure with C-Focus.

Nano-F100



Note: All Dimensions in Inches

*Both Images:
 MutS protein imaged with Cy3 via Prism TIRF
 Olympus IX71, 60x 1.45NA Oil, 1.6x magnification*

*Courtesy:
 Biomolecular & Cellular Dynamics Lab
 Dept of Physics/IBIO, POSTECH South Korea*