



APPLIED SCIENTIFIC
INSTRUMENTATION

CRISP Autofocus Option



ASI's Continuous Reflective Interface Sample Placement (CRISP) system is designed to maintain focus over time, i.e. compensate for thermal and other factors that may cause the sample to drift out of focus over time. It also can be used to maintain a given focal point while scanning the sample in XY. If you are looking to find the optimal focal point while scanning through the sample in Z please see our Video Autofocus system.

Installation

CRISP is usually installed with an ASI Dual C-Mount Splitter (DCMS) that contains the required dichroic beam combiner and blocking filters and provides the C-Mount port for the camera.

Features

- Mounts onto any microscope's standard C-Mount port
- Maintains ideal focus for days
- Works with most normal microscope objectives
- Low noise electronics allows locking to glass/water interfaces
- Integrates with ASI Piezo-Z or motorized focus stages
- Simple post-lock fine adjustment of focus
- Automated control

Adjustments, Options, and Control

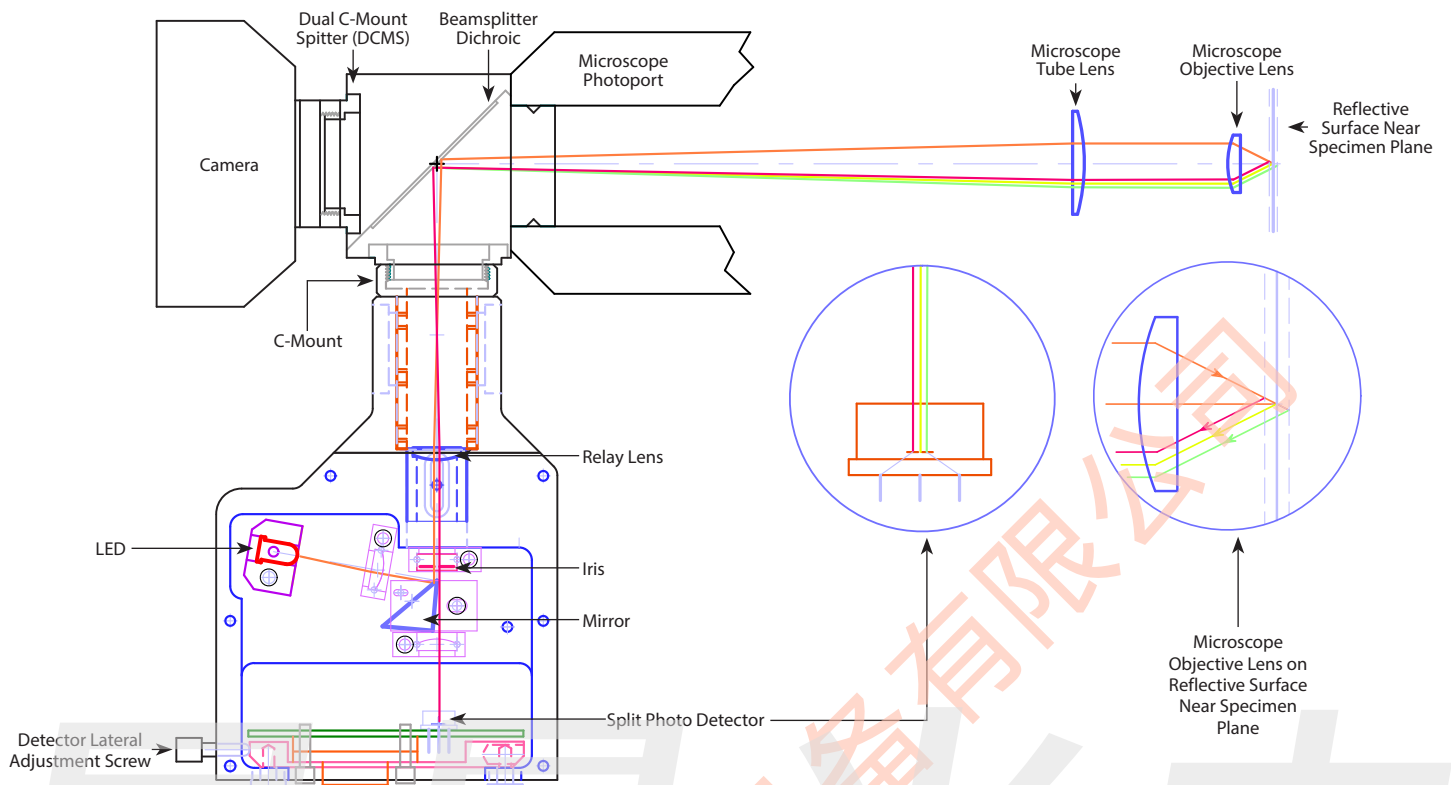
- Built-in C-Mount extension for optical offsets
- LED beam iris to match illumination beam to objective pupil for optimum performance
- Lateral detector adjustment
- Other LED colors possible
- LED intensity control
- Programmable gain and averaging functions to optimize system for stability or speed

Theory of Operation

The CRISP system projects the image of a mask illuminated with an IR LED into the sample plane. Only one half of the objective pupil is illuminated. This means that the point spread function of the objective is highly skewed, so that the reflected image of the mask will move laterally as focus is changed. CRISP detects this lateral motion of the LED image to obtain a focus error that is used to close the focus positioning loop.

Specifications

Light Source	LED
Wavelength	Choose from 625 nm - 1050 nm
Optical Interface	C-Mount
Typical Focus Accuracy	<5% of Objective Depth of Focus
Controller	MS-2000 w/ CRISP card TG-1000 w/ CRISP card



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