

PureFocus850

Hardware autofocus for industrial and life science microscopy

PureFocus850 combines advanced optics and intelligent microprocessing to provide a real-time focus system for infinity-corrected optical systems. It offers sample detection, dynamic power adjustment, and long focus recapture range.

A motorized offset lens allows adjustment of the imaging depth into the sample, continuously holding the precise distance between the imaging focal point and a reference interface of choice or enabling different discrete image planes to be acquired using the same interface.

Designed for versatility and mounted in the infinity space, it is compatible with most brands of commercial microscopes as well as Prior's OpenStand imaging platform, Queensgate piezo devices, and can be adapted for third-party focus actuators.

The laser's 850 nm operating wavelength does not interfere with common wavelengths used for fluorescence microscopy.



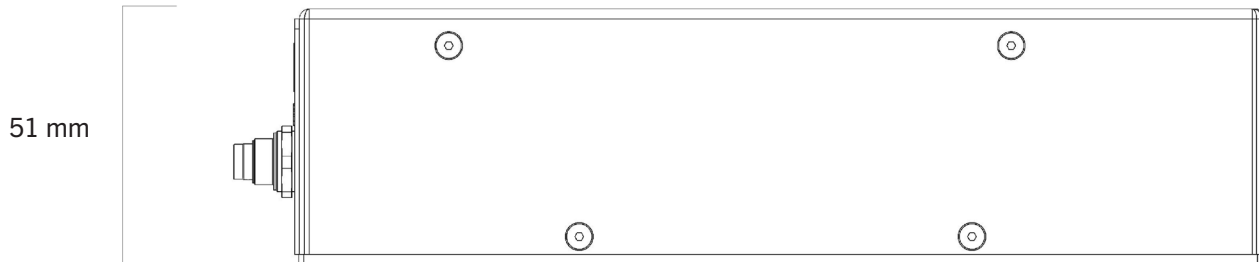
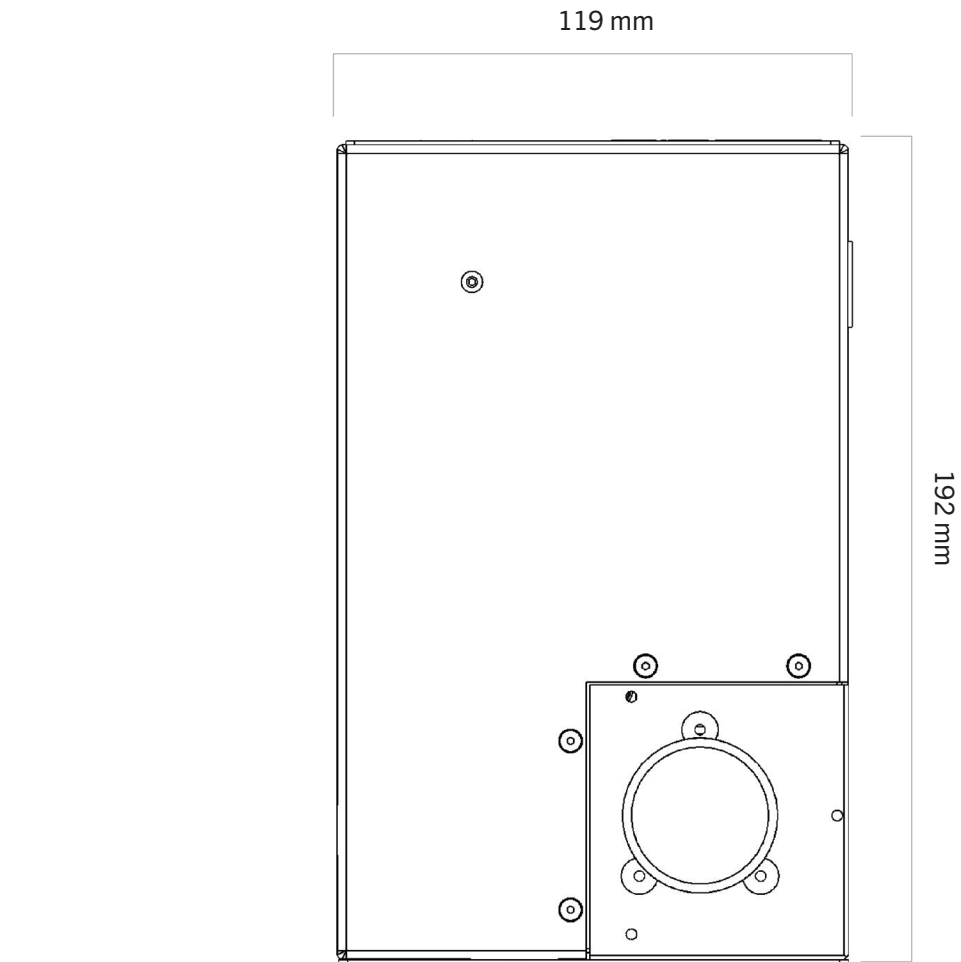
Key Features

- Rapid automated focus recovery.
- Integrated stepper motor driver and interface to Piezo and other actuators via 0-10 V analog output.
- Easily adapted to any infinity optical system, both upright and inverted.
- Stores and recalls multiple objective-specific parameters for multi-objective use.
- Customizable optics for specific imaging applications.

Applications

- Fluorescence microscopy
- Industrial inspection
- Semiconductor
- Time lapse microscopy
- Slide scanning

Dimensions



Specifications

		PF850	PF850M
Dichroic clear aperture, diameter		32 mm	32 mm
Laser optical output		< 0.77 mW	< 0.77 mW
Laser class		Class 1	Class 1
Laser wavelength		850 nm	850 nm
Focus accuracy ^{1,4}		20 % of DOF	20 % of DOF
Surface tracking method		Point on surface tracking	Averaged surface tracking
Typical update rate		1 kHz	1 kHz
Transmitted wavelength range ²		365 - 800 nm	365 - 800 nm
Capture speed ^{1,3}	5x, 0.13NA	< 30 ms	< 30 ms
	10x, 0.4NA	< 50 ms	< 50 ms
	20x, 0.5NA	< 60 ms	< 60 ms
	40x, 0.95NA	< 100 ms	< 100 ms
	100x, 0.9NA	< 1500 ms	< 1500 ms
Capture range ¹	5x, 0.13NA	+/- 15000 µm	+/- 15000 µm
	10x, 0.4NA	+/- 3000 µm	+/- 3000 µm
	20x, 0.5NA	+/- 1000 µm	+/- 1000 µm
	40x, 0.95NA	+/- 500 µm	+/- 500 µm
	100x, 0.9NA	+/- 100 µm	+/- 100 µm
Laser module mass		1.5 kg	1.5 kg

1. Representative value with optimal PID settings and signal to noise, sample and imaging system dependent.

2. >85% efficiency

3. 100 µm capture range

4. Depth of field (DOF) of the objective

Ordering Information

Part Number	Description
PF850	PureFocus850 laser module, HID controller with digipot and power supply, slice mode.
PF850M	PureFocus850 laser module, HID controller with digipot and power supply, line mode.
PF850OEM	PureFocus850 laser module, compact OEM controller and power supply, slice mode.
PF850MOEM	PureFocus850 laser module, compact OEM controller and power supply, line mode.

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