

PFA

Precision Focus Automation

WDI's next generation Precision Focus Automation "PFA" technology includes the world's fastest and most powerful microscopy autofocus sensor. Driven by demand for higher speed, greater accuracy and more flexibility for a wider variety of applications, the PFA sensor features significant advancements in optics, imaging, processing and communication.

- + Higher update rate and faster measurements, greater accuracy and repeatability with improved ease of integration
- + Fifteen times greater sensitivity, a global shutter and increased speed along with enhanced ability for both laser and video autofocus
- + Major improvements in memory, processor power and function as well as adaptability and programmability
- + Gigabit Ethernet communication and Linux OS provide greater reliability and enhanced capabilities



Speed

Modern optics, imaging and processing coupled with Gigabit Ethernet communication create the fastest autofocus solution available today.



Accuracy

A new imaging sensor together with a powerful processor and sophisticated algorithms provide autofocus accuracy to less than 0.25 of the objective DOF on samples as thin as 0.3mm.



Integration

Higher power, enhanced laser shaping, flexible outputs and intuitive software make PFA easier to integrate optically, mechanically and electrically without the requirement for an external controller.

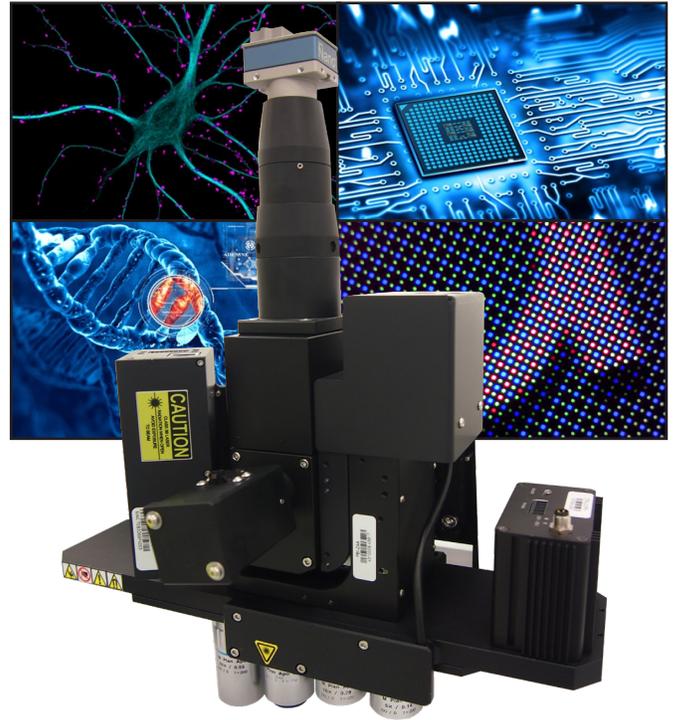


Flexibility

Available as stand alone or an integrated solution, PFA sensors may be adapted to virtually any imaging system and application including flat panel display and semiconductor inspection, biomedical imaging and machine vision metrology.

PFA FEATURES

- + Capable of both laser and video autofocus for demanding applications with a mixture of substrates, patterned surfaces or varying reflectivity
- + Advanced surface recognition functionality analyzes, differentiates and permits continuous focus on a specified surface in multilayer samples
- + Programmable 16 bit +/- 10V analog or digital output allows easy integration with any 3rd party piezo, linear or DIO controlled Z actuators
- + Alignment and Tune Up wizard software make integration and optimization fast and simple
- + Diagnostic and performance reporting provide real time analytic and statistical metrics



WDI's new PFA sensor couples the world's fastest most advanced autofocus technology with integrated automation components to create the perfect microscopy system solutions.

PFA SPECIFICATIONS

| Feature | | Feature | |
|-----------------------------|--------------------------------|-----------------------------|--------------------------------|
| Structured Light Pattern | Line | Line Processing Method | Dynamically Adjustable ROI |
| Laser Wavelengths Available | 660 nm, 785 nm | Typical Power Output | 2.7 mW maximum, Class 3R |
| Stand Off Distance | 300 mm maximum | Sampling Rate | Up to 3.5 kHz (SWIFT 7 kHz) |
| Static Autofocus Accuracy | ± 0.25 Objective DOF or better | Tracking Autofocus Accuracy | ± 0.33 Objective DOF or better |
| Internal Image Sensor | 1.3 MP 4.8 µm pixels 200fps | Shutter Type | Low Noise Global Shutter |
| Internal Processor | Dual Core ARMA9 @ 533 MHz | Memory | 512 MB DDR3 & 32 MB Flash |
| PC Communication | Gigabit Ethernet | Operating System | Linux OS |

| Objective (NA) | Linear Range (µm) | Capture Range (µm) | 3-Sigma Repeatability Error Limits (µm) | Autofocus Speed (ms) |
|----------------|-------------------|--------------------|---|----------------------|
| 5X/0.14 | ± 660 | ± 10000 | < 2 | < 75 |
| 10X/0.28 | ± 170 | ± 6000 | < 1 | < 65 |
| 20X/0.42 | ± 160 | ± 4300 | < 0.5 | < 120 |
| 50X/0.55 | ± 30 | ± 1000 | < 0.5 | < 120 |



WDI is a world leader in the design, manufacture, and integration of OEM and complete microscopy automation solutions for the biomedical, metrology, electronics, semiconductor, and flat panel display markets. WDI's success lies in an innovative culture and ability to optimize and adapt our technology to customers' specific requirements by listening to their needs and gaining a deep understanding of their processes, applications and goals. WDI employs over 30 optical, electrical, mechanical and software engineers, as well as scientists, who are dedicated to servicing our customers. Contact WDI today to see how we can help solve your microscopy automation needs.

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