PFA-DT

Precision Focus Automation - Dot

WDI's next generation Precision Focus Automation "PFA" technology features the world's most powerful microscopy autofocus sensors. Driven by demand from the Biomedical industry for fast and accurate autofocus solutions, WDI has developed and refined its technology to create PFA-DT. The new sensor provides many advancements in speed, accuracy, processing and communication, all at a very affordable price.

- Higher update rate and faster measurements result in improved high-speed tracking performance

- Offset Adjuster (OA) lens versions available to compensate for variances between the sensor focal plane and the camera imaging plane

- Major improvements in memory, processor power, function, adaptability and programmability

- Diagnostic and performance reporting provides real-time analytic and statistical metrics

Flexibility
PFA-DT can interface with many different types of Z motion systems including; Piezo actuators, Dover Motion's DOF-5, WDI PFABUS ZAAs and other third party Z axis stages. The sensor features a configurable output supporting both analog output and digital step and direction making it a universal solution.

Integration
A small footprint and simple optical alignment features coupled with an easy to use software application and software development kit make integration straight forward. Additionally, PFA-DT offers backwards compatibility with WDI's ATF4 SDK functionality and mechanical interfacing.

Accuracy
A powerful system on chip and advanced algorithms result in an autofocus accuracy less than 0.25 of the objective depth of field on samples as thin as 0.3 mm.

Speed
Up to 8 KHz sample rate and improved processing power, coupled with Gigabit Ethernet communication and embedded Linux OS create the fastest autofocus solution available today.

WDI
WISE DEVICE INC

PRECISION • FOCUS • AUTOMATION

PFA-DT & DOF-5

Partnering with Dover Motion, WDI has integrated the PFA-DT sensor with the DOF-5 linear objective focusing stage, to create a low-cost, high-performance nano positioning solution ideally suited for DNA sequencing, genomics, and fluorescence based biomedical imaging.

- A single software library SDK and console makes operation and integration simple

- The DOF-5 includes an internal high performance servo drive and electronics which integrate with the PFA-DT without any external controllers

- The DOF-5 features more than 5 mm of total travel, 5 nm resolution, and a step and settle under 12 ms

- The DOF-5's continuous counterbalance force ensures 5 nm of stability while supporting up to a 900 gram objective

PFA-DT SPECIFICATIONS

Feature		Feature	
Structured Light Pattern	Single Dot	Specimen Reflectivity	1 % - 99 %
Laser Wavelengths Available	660 nm, 785 nm, 850 nm	Stand Off Distance	200 mm maximum
Laser Classification	660 nm & 785 nm Class 1M, 850 nm Class 1	IEC Certification	61326-1 and 61010-1
Static Autofocus Accuracy	± 0.25 Objective DOF or better	Tracking Autofocus Accuracy	± 0.33 Objective DOF or better
PC Communication	Gigabit Ethernet, RS485	Sampling Rate	Up to 8 kHz

Objective (NA)	Numerical Aperture(NA)	DOF [μm]	Linear Range (μm)	Capture Range (μm)*
5X	0.14	±14	± 1400	± 4000
10X	0.28	±3.5	± 350	± 4000
20X	0.42	±1.6	± 160	± 1200
50X	0.55	±0.9	± 65	± 200

*Measured for 660 nm

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 scientists, optical, electrical, mechanical, software, quality, and applications engineers who are dedicated to servicing our customers. Contact WDI today to see how we can help solve your microscopy automation needs.

sales@wdidevice.com   www.wdidevice.com   +1 905.415.2734