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TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

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Full-service, independent repair center
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We buy your excess, underutilized, and idle equipment
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Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

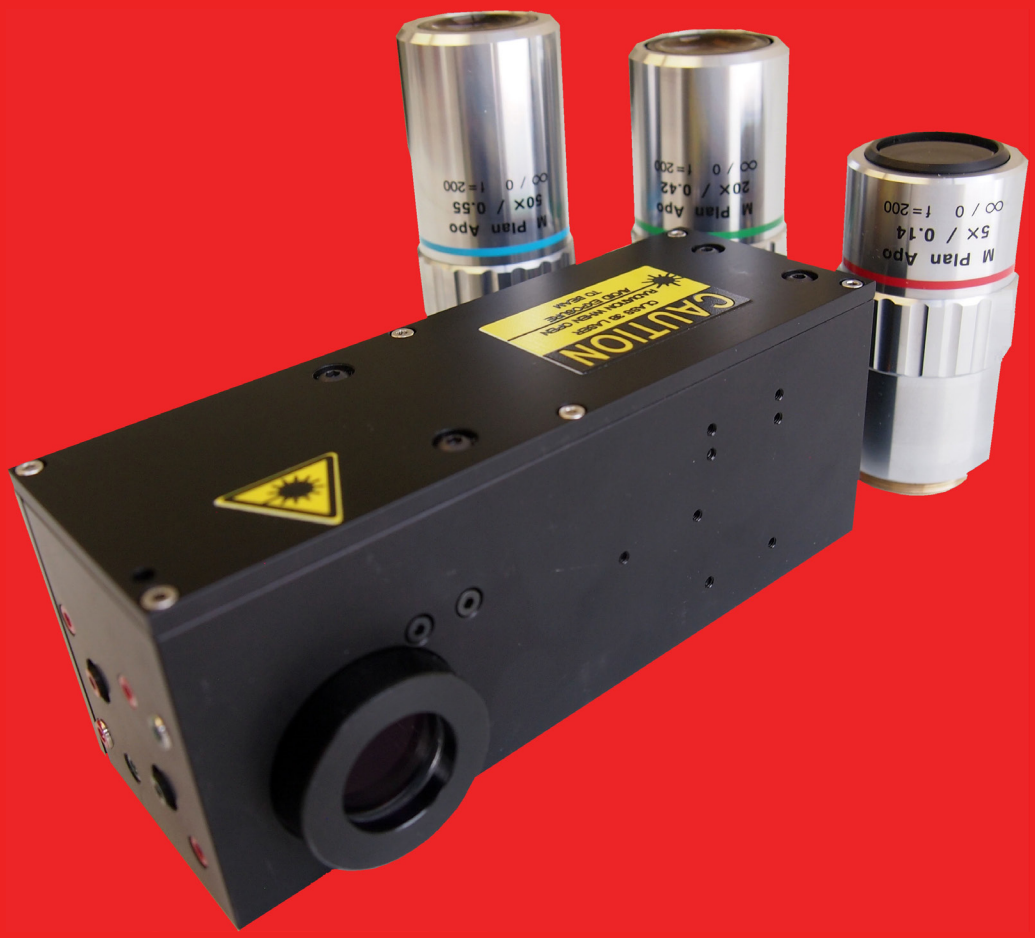
Expert team | Trust guarantee | 100% satisfaction

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THE ATF SENSOR FAMILY

AUTOFOCUS SENSORS



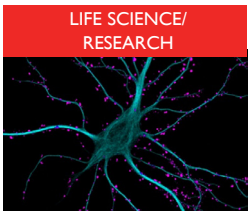
WDI
WISE DEVICE INC

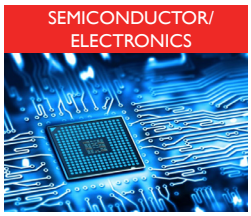
is a world leader in the design, manufacture and integration of OEM and complete microscopy automation solutions for the biomedical, metrology, electronics, semiconductor, and flat panel display markets.

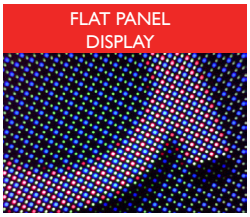
AUTOFOCUS SENSORS

The core of WDI's technology is our line of autonomous digital autofocus sensors (ATF) which may be integrated to existing customer supplied or WDI microscope systems. To meet the demands of a wide variety of applications, several sensor models are available, each with its own set of options depending on specific requirements. WDI's ATF technology is used worldwide in many environments including flat panel display, electronics and semiconductor manufacturing. Our products are also found in biomedical research and imaging automation applications.











- ✓ "Smart Sensor Architecture" (SSA) which incorporates a semiconductor laser, CMOS image sensor, FPGA and microprocessor.
- ✓ High speed, high accuracy, reliable and repeatable performance.
- ✓ The ability to maintains focus on a variety of surfaces and substrates that are stationary or moving in real time.
- ✓ A variety of integration, control and performance options making them adaptable to a wide range of complex applications and demanding environments.

Static or Dynamic Focus

The combination of laser optics and an integrated microprocessor allow WDI's ATF sensors to focus equally on both static stationary surfaces and those that are moving dynamically. Supporting this is more than a decade of experience working with customers to solve real world application challenges.

High Speed and Accuracy

ATF sensors quickly determine the distance and direction to focus, with an internal update rate of 20kHz and an output rate of up to 6.5kHz. Auto adjustment, advanced processing, and on board algorithms permit the ATF sensor to maintain this focus even on complex surfaces moving at high speed.

Easy Integration and Implementation

Ease of integration and implementation are key features of the ATF. Both analog and digital output variants are available. A number of controller options are also available including those required to interface with many 3rd party stepper, linear and piezo Z motion systems. Full software and a SDK are standard.

Maximum flexibility

WDI's ATF sensors work on many surfaces including un-patterned, patterned, speculative and diffusing. By automatically sensing and adjusting the ATF can adapt to variances in the reflectivity of surfaces. Sensor are compatible with objectives from 2X to 100X, and wavelengths including UV, NUV and NIR.

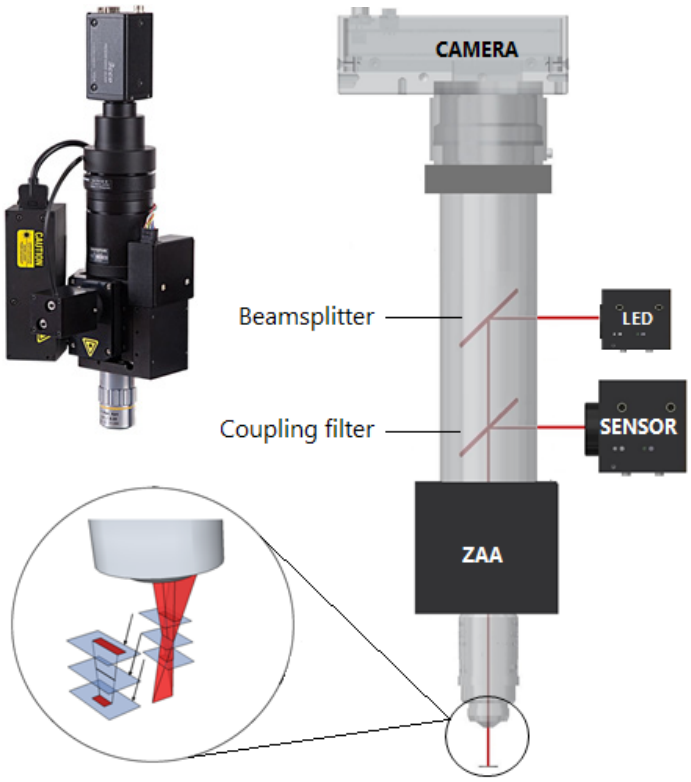
PRINCIPLE OF OPERATION

The ATF sensor uses the principle of through-the-lens (TTL) triangulation to assess the direction and distance to focus which overcomes many issues associated with other proximity sensor technologies.

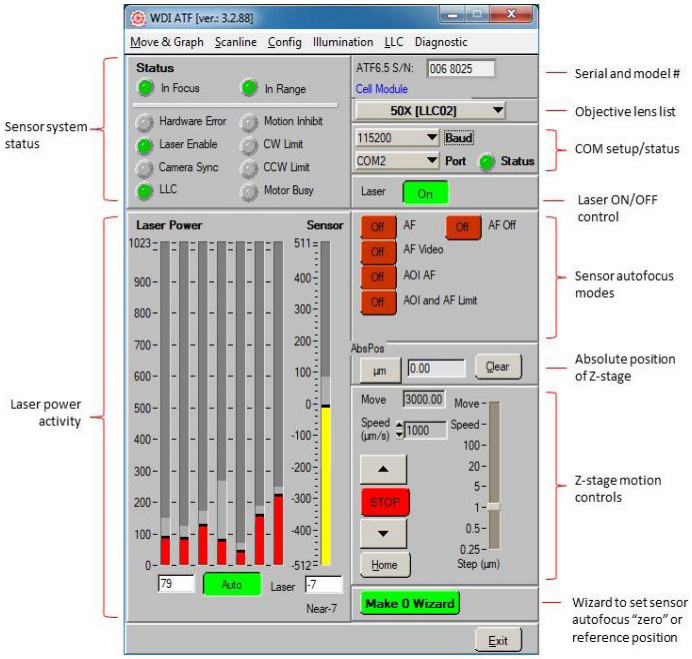
A structured laser light pattern is generated and directed through the objective. It is reflected by the surface and directed back through the objective to the ATF where it is imaged and analyzed resulting in a calculated distance and direction to best focus.

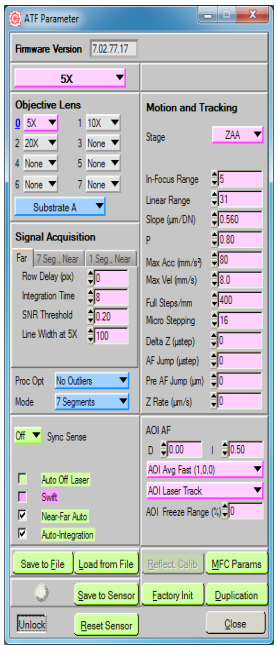
When the laser pattern appears as a sharp dot or line, the specimen is in focus. When the laser pattern appears as a semi-circle or rectangle, the specimen is above or below the focus position.

The ATF is able to quickly determine both distance and direction to focus within a fraction of the objective's DOF.



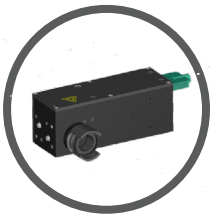
FULL SOFTWARE SUPPORT





All WDI ATF sensors are supported by our console software and SDK Library allowing both configuration and control from customer written applications. Features such as "Move & Graph" and an alignment and tuning "Wizard" simplify the installation and calibration process. Customization options include the ability to set parameters for up to 8 different objectives and 5 different target materials or substrates. Advanced processing features include "Cell and Module" which allows the ATF to differentiate reflections from a multi-layer medium such as TFT arrays and selectively focus on a specified substrate and "Multi-plane Autofocus" which is used when a target has multiple surfaces with different heights and reflectivity such as PCB.

SPECIAL VARIANTS



ATF4-OA
"Optical Adjuster" variant ideal for DNA sequencing



ATF6-PZ
"Piezo" variant compatible with 3rd party PZ motion



ATF6-DOF
"DOF" variant compatible with Dover DOF5



ATF6-WASP
"WASP" variant compatible with polarized film surfaces

ATF SPECIFICATIONS

Category	ATF 4			ATF 6		ATF 6.5	
Wavelength Available (nm)	658, 785, 850			510, 660, 785, 850		680, 785	
Power Output (mW)	658	785	850	660	785	680	785
	0.28	0.8	0.17	0.25	0.18	1.8	2
Laser Classification	1			1 (658), 3B (510, 785, 850)		3B	
Maximum Standoff Distance	200 mm					300 mm	
Internal Update Rate	20kH						
Output Data Rate	1.7kHz/6.5kHz						
Structured Light Pattern	Single Dot			Line Segment			
Specimen Reflectivity	1% - 99%						
Static Autofocus Accuracy	± 1/4 Objective Depth of Field or better						
Tracking Autofocus Accuracy	± 1/2 Objective Depth of Field or better						
Autofocus Repeatability	1/3 Objective Depth of Field or better						

Objective (NA)	Linear Range (µm)			Capture Range (µm)		
	ATF 4	ATF 6	ATF 6.5	ATF 4	ATF 6	ATF 6.5
5X/0.14	± 500	± 560	± 420	± 3000	± 3000	± 5000
10X/0.28	± 100	± 130	± 100	± 1000	± 1500	± 3000
20X/0.42	± 30	± 30	± 25	± 600	± 600	± 1800
50X/0.55	± 20	± 10	± 10	± 200	± 250	± 750

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. We have locations in Canada and Poland, with service centers in Taiwan and South Korea. Contact WDI today to see how we can help solve your microscopy automation needs.

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Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

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We're here to make your life easier. How can we help you today?

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