



AccuFiz®

4D Technology

Compact Fizeau Interferometer

Real-World Performance

The AccuFiz laser interferometer offers an unmatched combination of performance, quality and value, for accurate, repeatable measurement of surface shape and transmitted wavefront quality.

The AccuFiz is extremely easy to use in confined lab spaces. Its **compact, lightweight** design is extremely rigid for maximum stability in any orientation or environment.

In production environments as well as in the lab the AccuFiz provides **industry leading repeatability**. Only AccuFiz includes Smart Zoom™ to ensure accurate lateral resolution over the entire 1X–10X zoom range. Diffraction-limited imaging provides **unparalleled resolution**, particularly at mid-spatial frequencies, to measure polishing artifacts that other interferometers miss.

The AccuFiz is designed to excel in challenging conditions. With the industry's only continuously adjustable extended source you can optimize for test conditions and reduce coherent artifacts from dust, defects and stray reflections, resulting in **extremely low measurement noise**. On the shop floor or in a clean room, optional Dynamic Interferometry® enables exposure times down to 10 μs, so you can **measure despite vibration**, without isolation.

Wireless remote control makes it easy to set up long path measurements and to minimize disturbance of the optical path. You can even control the system from an Android device or iPhone.

FEATURES

- Compact, Lightweight, Rugged Design
- Industry Leading Repeatability and Resolution
- Adjustable Extended Source for Extremely Low Noise
- Continuous Zoom, Accurate Over Full Range
- Phase Shifting and Vibration-Insensitive Dynamic Modes
- Wireless Remote Control from Network Devices
- Adjustable Brightness Alignment Camera
- 6 MP Option to Capture Highest Slopes
- Surface Isolation Option to Measure Plane Parallel Surfaces
- 33–800 mm Apertures, 355–1550 nm Wavelengths

Flexibility for a Wide Range of Measurements

The full AccuFiz product line offers wavelengths from 355 nm through 10.6 μm, apertures from 33 to 800 mm, and horizontal and vertical mounting configurations, providing the right options for a wide range of applications and budgets.

The optional 6 megapixel, high resolution camera **captures the highest slopes** of any commercial interferometer. Measure aspheres, freeform optics and highly aberrated elements.

The optional Surface Isolation Source adds the ability to **measure plane parallel surfaces** without coatings or back-surface treatments. Quantify shape, optical thickness down to 100 μm, wedge and homogeneity.

Motorized tip/tilt and an adjustable-brightness alignment camera **simplify fine adjustment**. To complete your setup, 4D offers the broadest range of F/# spheres in the industry, and optical mounts, beam expanders and accessories for virtually any test setup.

Software Minimizes Time to Results

4Sight™ wavefront analysis software, included with every AccuFiz, features excellent ease of use and a short learning curve. 2D and 3D displays, filtering, thresholds and masking tools make it easy to highlight surface shape and texture. Zernike, Seidel, geometric and diffraction analyses are easy to perform. Comprehensive data sharing capabilities let you read, write, save and print data in many common file formats for comparison between instruments. Optional 4Front™ software enables real-time measurement for system alignment, and fast averaging of many datasets.

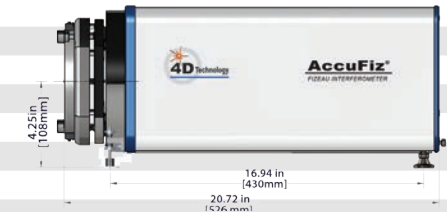


AccuFiz Fizeau Interferometer
4 in Aperture Model

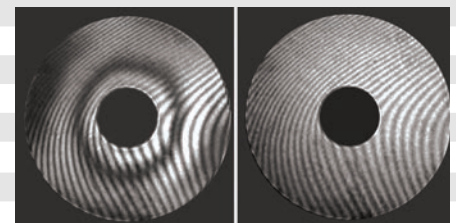
AccuFiz®

Specifications

| Description | AccuFiz |
|---------------------------|---|
| Optical Configuration | Fizeau interferometer system |
| Acquisition Mode | Temporal Phase Shifting; optional Dynamic Measurement |
| Laser Source | 632.8 nm HeNe standard; optional stabilized laser; continuously adjustable, point to extended optional 355, 532, 1053, 1064 and 1550 nm wavelengths; additional wavelengths to 10.6 μ m |
| Aperture Size | 4, 6, 12 in (100, 150, 300 mm) standard; optional 33 mm (1.3 in) to 800 mm (32 in) |
| Output Polarization | Circular; optional adjustable linear |
| Zoom | Continuous 1–10X Smart Zoom with pan, calibrated at all zoom settings |
| Pupil Focus Range | Motorized; 4 in model: ± 2 m, at all zoom settings 6 in model: ± 4.5 m, at all zoom settings |
| Alignment | twin spot; controllable camera optimizes alignment signal; adjustable brightness, zoom |
| Camera | VGA standard; optional 1.44 MP (1200 x 1200 pixels) or 6 MP (2400 x 2400 pixels); 12-bit dynamic range |
| Remote Operation | Wireless remote controls focus, zoom, pan, source diameter, tip/tilt, measurement; can also be controlled from user-authorized Android™ or iOS™ devices |
| Operating System | Windows® 7 |
| System Software | 4Sight™ comprehensive analysis and acquisition software |
| Physical Envelope | 4 in model: 51.4 x 23.8 x 20.3 cm (20.2 x 9.4 x 8.0 in) 6 in model: 76.2 x 27.9 x 24.1 cm (30.0 x 11.0 x 9.5 in) |
| Mounting Configurations | Horizontal or vertical (look-down) |
| Optical Axis | 4 in model: 4.25 in (10.8 cm); 6 in model: 5.25 in (13.3 cm) |
| Weight | 4 in model: <13.6 kg (30 lbs); 6 in model: <22.7 kg (50 lbs) |
| Power Consumption | < 750 Watts |
| Temperature Range | Operational: 16–27° C (60–80° F), non-condensing Storage: -1–38° C (30–100° F), non-condensing |
| Options | |
| High Speed Acquisition | 4Front™ software for high speed alignment and measurement |
| High Resolution | 6 MP camera for measuring aspheres, high slopes |
| Artifact Suppression | Continuously variable source size for extremely low noise floor |
| Dynamic Measurement | Vibration-insensitive operation for challenging environments |
| Surface Isolation Source | External source module for measuring plane parallel optics |
| High Power Source | Additional high intensity source for aligning high loss test paths |
| Motorized Tip/Tilt | Precise, remote reference alignment |
| Digital Radius Slide | Highly accurate radius of curvature measurement |
| Mounting Accessories | Comprehensive line of mounts |
| Reference & Return Optics | Compatible with all bayonet mount flats and spheres Broad range of F/# and aperture sizes to best match test parts |
| Performance | |
| Fringe Resolution | 1.44 MP camera: > 500; 6 MP camera > 1000 |
| Spatial Freq. Response | ITF > 0.7, at 500 cycles/aperture for 1.44 MP camera; 1000 cyc/ap for 6 MP camera |
| RMS Repeatability | <0.00005 waves (0.03 nm) RMS* |
| RMS Precision | 0.0005 waves (0.3 nm) RMS** |
| Minimum Exposure Time | 10 μ s |
| Sample Reflectivity | 1 to 100% (attenuation required) |
| Warranty | One year, limited, standard; extendable; Includes on-site system installation and operator training. |



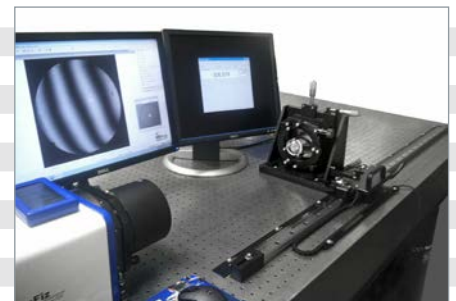
AccuFiz 4 in Aperture Model



With Standard Source With Surface Isolation Source



Motorized Tip/Tilt
for fast, precise
remote alignment



Digital Radius
Slide for ROC
Measurement

All specifications subject to change without notice.

* One sigma for RMS of 10 data sets of calibration mirror, each data set being an average of 16 measurements with extended source.

** Mean standard deviation of 10 Difference Surface maps, each map being an average of 16 measurements with extended source.

AccuFiz and Dynamic Interferometry are registered trademarks of 4D Technology Corporation. 4Sight, 4Front and Smart Zoom are trademarks of 4D Technology Corporation. Windows, Android and iOS are trademarks or registered trademarks of their respective companies.



VISIBLE LASER RADIATION
DO NOT STARE INTO BEAM.
CLASS 2 LASER PRODUCT
<0.5mW at 633nm

8.4.15 ■ ©4D Technology Corporation