

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.

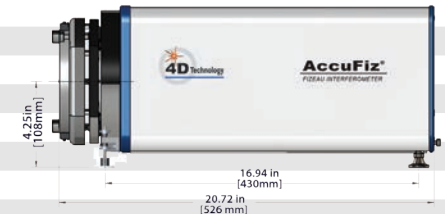


AccuFiz Fizeau Interferometer
4 in Aperture Model

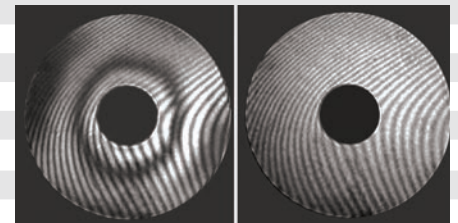
AccuFiz®

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 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 parts
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.



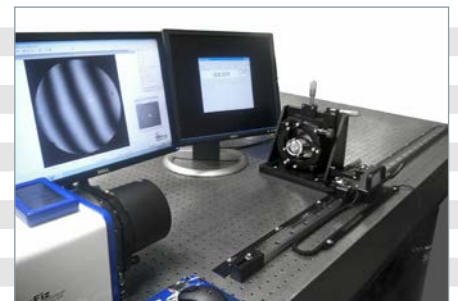
AccuFiz 4 in Aperture Model



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.

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

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