# AccuFiz® Duo

## Short and Long Coherence Fizeau Interferometer

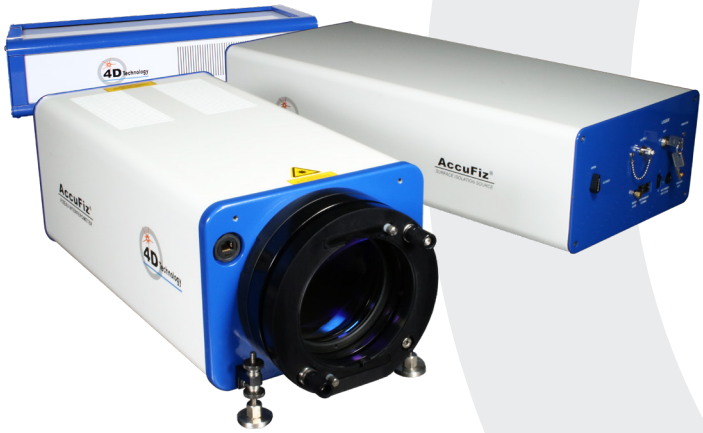
### Two Interferometers in One Complete System

The AccuFiz Duo Fizeau interferometer system comes with two laser sources delivering both short coherence on axis dynamic and long coherence phase shifting interferometry.

The AccuFiz Duo's short coherence mode performs on-axis dynamic measurements, incorporating patented technology using a single camera, high-speed phase sensor that makes a wavefront measurement in as little as 150 microseconds. The result is highly accurate measurements, even in the presence of vibration and turbulence.

The short coherence length source enables measurement of plane parallel glass surfaces down to 0.2mm thickness without needing to coat either surface. Other applications include remote cavity measurements, testing index homogeneity, and testing in environmental chambers.

The AccuFiz Duo's additional long coherence source uses a stabilized HeNe laser and operates with all the benefits of a standard phase shifting Fizeau interferometer. The long coherence mode enables very long cavity measurements and has spatial carrier dynamic mode as an option for vibration and turbulence mitigation. It is also useful for standard radius of curvature measurements. The 632.8nm HeNe source facilitates measurements with digital holograms.




AccuFiz Duo Fizeau Interferometer, Short Coherence Surface Isolation Source Module, and Long Coherence HeNe Module

### Industry Leading Analysis Software

4Sight™ Focus wavefront analysis software features a user-friendly interface with unmatched simplicity, analysis features and graphical displays. Acquire single, averaged, burst or continuous measurements, access all settings, and display results from dozens of analyses. Seidel, geometric and diffraction analyses are all easy to perform. Display Zernike results in real time for instant feedback on alignment of test optics. Comprehensive data sharing lets you read, write, save, and print from most file types.

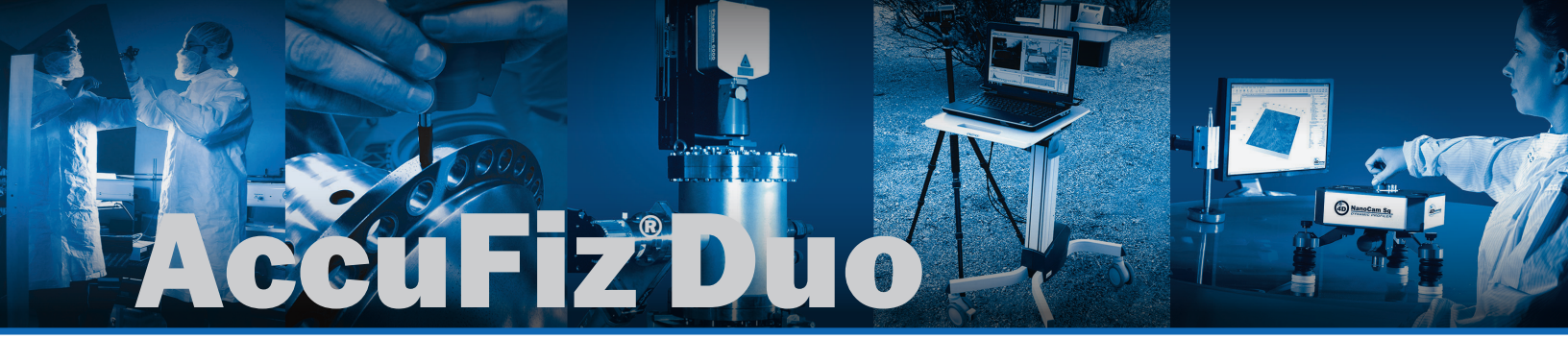
## FEATURES

- Compact, Lightweight, Rugged Design
- Vibration Insensitive Dynamic Operation
- Short and Long Coherence Operating Modes
- Remote Operation with Hand Controller
- 10X Digital Zoom
- Compatible with Standard Fizeau Optics
- 9MP Camera
- Adjustable Extended Source

## APPLICATIONS

- Thin, Transparent Optics
- Isolate & Measure Individual Surfaces
- Remote Cavity/ Optical Thickness
- Flats, Spheres, Prisms, etc.
- Transmission Testing of Components and Systems
- Rapid Optical System Alignment
- Testing into Vacuum and Environmental Chambers
- Long Cavity Measurements

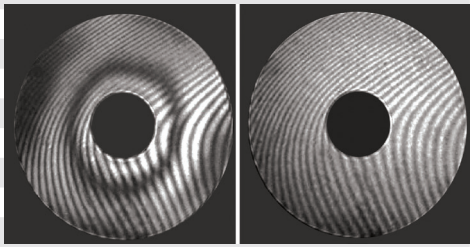
3280 E Hemisphere Loop, Ste 146, Tucson, AZ 85706 • Tel: +1 (520) 294-5600 • Fax: +1 (520) 294-5601 • www.4DTechnology.com



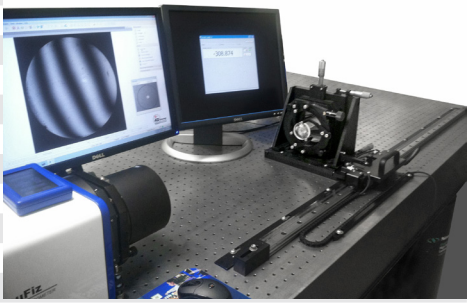
# AccuFiz® Duo

## Specifications

| | |
|---|---|
| **Optical Configuration** | Fizeau interferometer system |
| **Acquisition Mode** | Instantaneous phase shifting with pixelated phase sensor |
| | Temporal phase shifting with long coherence source; optional spatial carrier dynamic |
| **Laser Source** | 636 nm, short coherence length, approximately 200µm |
| | 632.8 nm, long coherence length stabiliized HeNe |
| **Aperture Size** | 100 mm or 150 mm collimated standard; beam expanders available |
| **Reference Optics** | Bayonet mounted; 10.8 cm (4.25 in) optical axis |
| **Zoom** | Continuous 1–10X Digital Zoom with pan, calibrated at all zoom settings |
| **Pupil Focus Range** | Motorized; ±2 m, at all zoom settings |
| **Alignment** | Twin spot; high dynamic range with zoom |
| **Camera** | 3K x 3K pixels, 8-bit; exposure 1 msec typical (1.5K x 1.5K pixels with long coherence source) |
| **Remote Operation** | Wireless remote controls focus, zoom, pan, extended source size, measurement |
| **Data Array** | Selectable: full, half, quarter resolution |
| **Path Matching** | Motorized, automated; 0-500 mm (0-19.7 in) range standard |
| | Optional cavity length to 2 m (78.7 in) |
| **Computer System** | High performance PC |
| **Operating System** | Windows® 10 or higher |
| **System Software** | 4Sight™ Focus analysis and acquisition software |
| **Physical Envelope** | Interferometer: 51.4 × 23.8 × 20.3 cm (20.2 × 9.4 × 8.0 in) |
| | Short Coherence Source Module: 68.2 × 28.2 × 17.0 cm (11.1 × 26.8 × 6.7 in) |
| | Long Coherence Source Module: 58.9 × 24.1 × 14.0 cm (23.2 × 9.5 × 5.5 in) |
| **Weight** | Interferometer: <13.6 kg (30 lbs) |
| | Short Coherence Source Module: <20 kg (44 lbs) |
| | Long Coherence Source Module: 12.25 kg (27 lbs) |
| **Mounting Configurations** | Horizontal, look-down or look-up |
| **Optical Axis** | 4.25 in (10.8 cm) for 100 mm aperture; 5.25 in (13.34 cm) for 150 mm aperture |
| **Power Consumption** | < 750 Watts |
| **Temperature Range** | Operational: 16–27° C (60–80° F), non-condensing |
| | Storage: -1–38° C (30–100° F), non-condensing |



With Typical Interferometer | With AccuFiz Duo Short Coherence



AccuFiz Duo Long Coherence ROC Measurement

### Options

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|---|---|
| **Motorized Tip/Tilt** | Precise, remote reference alignment |
| **Mounting Accessories** | Comprehensive line of industry-compatible mounts and digital radius slide options |
| **Reference & Return Optics** | Broad range of F/# and aperture sizes to best match test parts |

### Performance

| | |
|---|---|
| **Acquisition Rate** | > 15 frames/sec |
| **Sample Reflectivity** | 1 to 100% (attenuation required) |
| **RMS Repeatability** | <0.00005 wave (0.03 nm)* |
| **RMS Precision** | <0.0005 wave (0.3 nm)** |
| **Uncalibrated Accuracy** | <λ/20 transmission flats (typical with reference subtract) |

### Warranty

One year, limited, standard; extendable. Includes on-site system installation and operator training.
Two year, limited, standard on HeNe laser only; extendable.

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.



LASER RADIATION
AVOID EXPOSURE TO BEAM
CLASS 3R LASER PRODUCT
<5mW at 636nm

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An Onto Innovation Business



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