

**DUAL WAVELENGTH Infrared Phase Interferometers**  
**155irVIS – 4-inch aperture Fizeau**  
**6155irVIS – 6-inch aperture Fizeau**



*We sell metrology solutions!*



The 155irVIS and 6155irVIS are Dual Wavelength Phase-shifting Fizeau Interferometers that operate in two modes: Infrared or Visible—switch selectable. Other than size, the two interferometers are identical.

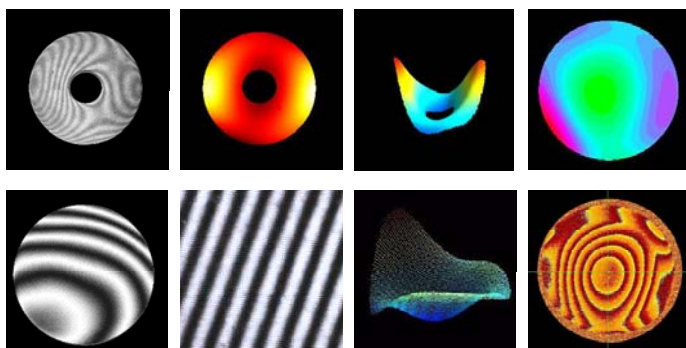
The instruments feature fused silica collimator and two separate Single Mode Diode Lasers operating at 1550 nm and 635 nm. Both sources are dithered to produce speckle-free live images on the computer monitor with no Bull's-eye aliases. Two cameras are used – one with sensitivity at 1550 nm, the other sensitive to visible light. The infrared camera provides a resolution of 320 x 256 pixels, while the visible wavelength camera provides resolution of 768 x 494 pixels.

Both Models utilize Durango Universal Interferometry Software together with Graham's EndoPhase™ for smooth, hysteresis-free phase shifting to allow the operator to achieve highly accurate and repeatable measurements at both infrared and visible wavelengths. In typical usage of Dual Wavelength Interferometers, the operator can align the optical system and perform any necessary tip/tilt operations with the interferometer in VISIBLE MODE—greatly simplifying the procedure. Measurement of reflective surfaces may also be measured at 635 nm – providing higher accuracy. With Zoom optics, the operator has remote control of Zoom, Focus, Iris and Illumination, at both wavelengths. Both Interferometers are equipped with a 2.2 GHz computer with Intel Dual-core processor, and 19-inch TFT flat screen monitor which displays live interferograms as well as computer graphics and measurement data. .

SPECIFICATIONS FOR MODEL 155irVIS	
Aperture 4.0 inches	[101.6 mm]
Imaging Lens (IR and visible)	5X ZOOM
Dimensions LxWxH	20 x 18 x 10 (in)
Beam Height	5.25 inches
Weight	75 pounds [34 kg]

SPECIFICATIONS FOR MODEL 6155irVIS	
Aperture 6.0 inches	[152.4 mm]
Imaging Lens (IR and visible)	5X ZOOM
Dimensions LxWxH	30 x 22 x 10 (in)
Beam Height	5.25 inches
Weight	110 pounds [50 kg]

**Typical Interferograms and Durango Graphics**



PROPERTIES COMMON TO BOTH INTERFEROMETERS			
Accuracy [uncalibrated]	$\lambda$ /50 at 1550 nm	$\lambda$ /20 at 635 nm	
Accuracy [calibrated]	$\lambda$ /240 at 1550 nm	$\lambda$ /100 at 635 nm	
Repeatability	$\lambda$ /300 PV	$\lambda$ /1000 rms	
Software	Durango Universal Interferometry Software		
Data Acquisition Time	30 milliseconds [typical]		
Data Reduction Time	<3seconds [typical]		
Computer	2.2 GHz with INTEL Dual Core Processor		
Monitor	19-inch TFT Flat Screen		
Power	117 / 240 Volts	60/50 Hz	2Amperes



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 Diffraction International

FEATURE	BENEFIT
Dual Wavelength 1550 nm / 635 nm switch selectable.	Alignment of two wavelength optical path is coaxial
Tip / Tilt plate for mounting of T-Flats and T-Spheres	T-flat provided (1/20 wave at 635 nm)
Zoom lens 4X at both wavelengths	Remote control of zoom, focus, iris and intensity
Two-spot alignment	Simultaneous for both wavelengths
Dithered Laser sources at both wavelengths	Speckle-free interferograms – no Bull’s-eye aliases
EndoPhaze™	Smooth Phase Shifting with no hysteresis
CCD camera for 635 nm mode	768 x 494 pixels
Infrared camera for 1550 nm mode	320 x 256 pixels
Durango Universal Interferometry Software	Windows environment PV and rms in users choice of units High level of repeatability Excellent reproducibility Large choice of graphic displays Dynamic Sections 3-D OPD Plot Reference Subtraction MTF and PSF graphics and plots Zernike Polynomials available for all measurements Seidel Coefficients available
2.2 GHz computer with Intel Dual Core Processor	For high speed data reduction and phase shift control
Live interferogram on computer monitor	No need for separate video monitor
Repeatability Reproducibility	1/300 wave PV, 1/1000 wave rms Excellent!
Data Acquisition time 30 milliseconds (typical) Data reduction time ~3 seconds (typical)	Fast!
Dimensions: 155irVIS (L x W x H) 20 x 18 x 10 inches 6155irVIS (L x W x H) 30 x 22 x 10 inches	Small footprint
Solidly built	For high stability
Manual	Illustrated Operator’s Manual
Power 115/240 Volts 50/60 Hz	Wired with proper plug for user’s power system
Warranty	Standard two-year limited warranty against defective components or workmanship