

# VPS series of Phase Interferometers



Graham Optical Systems offers the VPS series of Phase Interferometers that may be used in either vertical or horizontal format. Provided with a 1/20 wave Transmission Flat, the interferometers can be used for Spherical work with the addition of the appropriate transmission sphere.

For Plano work the vertical format is usually preferred since there is no need to mount the test piece in a fixture. The operator merely places it on the integral tip/tilt table and makes the required adjustment utilizing the Two-Spot alignment feature. The sturdy tip/tilt table has been designed to support substantial mass. Its height is adjustable in order to decrease the air gap between the reference surface and the test piece to minimize the effect of air currents. The customer may select the length of the vertical rails at time of purchase.

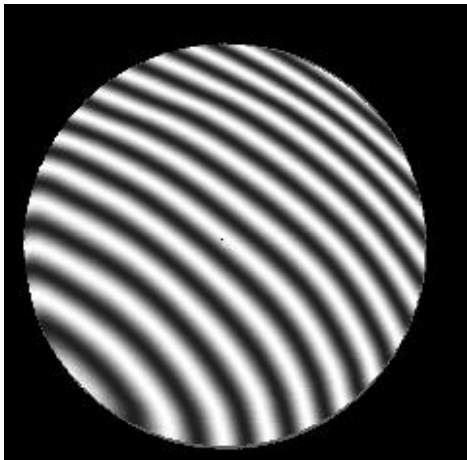
For spherical work, it is preferable to remove the interferometer from the rail system and use it in the horizontal format. This permits the accommodation of spherical surfaces with longer radii of curvature.

The VPS series of interferometers employ Graham's proprietary optical system renowned for producing the highest contrast interferograms with no Bull's-eye aliases.

Standard equipment provides remote control of focus, zoom and intensity controls directly on the instrument body. In the VPS series, Durango Universal Interferometry Software interacts with Graham's EndoPhaze™ system to control Phase-Shifting. The software, Image Acquisition Board, and Data Acquisition Board are installed in a 2.2 GHz computer with an Intel Dual-Core Processor. A 19-inch TFT flat screen monitor is included.

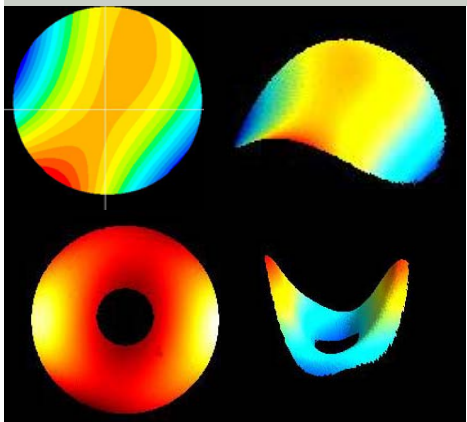
Durango provides a wide selection of data outputs and colorful graphics and offers a live interferogram on the computer monitor thus eliminating the need for separate video monitor. The operator may select the features that he prefers to display on the screen from among an assortment of graphics and data reports. Durango permits the QC manager to set the criteria for the pass/fail feature, thus permitting the routine measurement of test pieces by less skilled personnel.

These rugged instruments are equally at home in the QC lab or in the optical fabrication shop. With excellent repeatability and reproducibility, this precision instrument provides the metrology required for all of your interferometric measurements.



Typical High Contrast Interferogram

Typical Durango Plots



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SPECIFICATIONS	BENEFITS
4-inch aperture (101.6 mm ) 6-inch aperture (152.4 mm) 8-inch aperture (203.2 mm)	Select the model that best suits your requirements
<a href="#">1/20 wave fused silica reference surface</a>	<a href="#">High accuracy</a>
Proprietary Optics for superior performance	Highest contrast and cleanest interferogram of any interferometer available today. No bull's-eye aliases!
<a href="#">Rugged construction</a>	<a href="#">High mechanical stability</a>
A Turnkey System	User Friendly and ready to go
<a href="#">Vertical or Horizontal Orientation</a>	<a href="#">Interferometer may be removed from rails.</a>
Your choice of rail length	Select from your choice of 30, 36, 42, or 48 inch rails at time of purchase
<a href="#">Two spot alignment</a>	<a href="#">For quick setup on each new part tested</a>
Single Mode Diode Laser source (635 nm)	Dithered for Sharp, speckle-free images
<a href="#">Zoom Optics</a>	<a href="#">Standard</a>
Zoom, Focus, Iris, Intensity	Remote Control offered as option
<a href="#">Adjustable height Tip/Tilt Table for thick test pieces</a>	<a href="#">Sturdy construction accommodates heavy test pieces</a>
EndoPhase™ for hysteresis-free phase shifting	For smooth hysteresis-free phase shifting!
<a href="#">CCD Camera 768(H) x 494(V) pixels</a>	<a href="#">High resolution</a>
Durango Universal Interferometer Software*  	Windows environment PV and rms in choice of units High level of repeatability, Excellent reproducibility Large choice of graphic displays including 3D Plot Dynamic Sections Reference Subtraction MTF and PSF graphics and plots Zernike Polynomials available for all measurements Seidel Coefficients available Pass/Fail Feature Selection of colorful, printable reports
<a href="#">2.2 GHz Computer with Intel Dual Core Processor</a>	<a href="#">For high speed data reduction and phase shift control</a>
19-inch TFT Flat Screen Monitor	For easy viewing
<a href="#">Live interferogram on computer monitor</a>	<a href="#">For quick inspection without extra video monitor</a>
Tip / Tilt plate with bayonet mount for attachment of Transmission flats or Transmission Spheres	Transmission Flat supplied with interferometer Transmission Spheres optional
<a href="#">High Accuracy</a>	<a href="#">1/20 wave (uncalibrated)</a> <a href="#">1/300 wave (calibrated)</a>
<a href="#">Repeatability</a>	1/100 wave PV 1/1000 wave rms
<a href="#">Reproducibility</a>	<a href="#">Excellent</a>
Data Acquisition time 30 milliseconds (typical)	Fast
<a href="#">Data Reduction time ~3 seconds (typical)</a>	<a href="#">Fast</a>
Footprint Model 4VPS (W x D) 18 x 20 inches Footprint Model 6VPS (W x D) 20 x 24 inches Footprint Model 8VPS (W x D) 24 x 30 inches	Small footprint -- you choose the height!
<a href="#">Weight Model 4VPS 120 pounds</a> <a href="#">Weight Model 6VPS 140 pounds</a> <a href="#">Weight Model 8VPS 160 pounds</a>	<a href="#">Solidly built for high stability</a>
Power 117 V 60 Hz 2 A or 240V 50Hz	Wired with plug to suit the customer's power source
<a href="#">Manual</a>	<a href="#">Illustrated Operator's Manual</a>
Warranty	Standard two-year limited warranty against defective components or workmanship. Extended warranty available.