

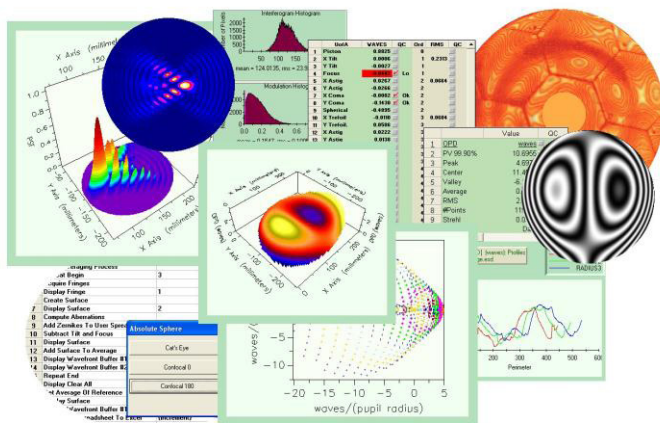
Optowave 40 is a full-featured interferometer that can provide non-contact measurement of flat or spherical surfaces and transmitted wavefront of optical components and assemblies. It is ideal for measuring a wide variety of optical components including but not limited to contact lenses, IntraOcular Lenses and Mold Inserts. Measurements can be made using simple basic visual fringe inspection, IntelliPhase™ static spatial carrier analysis, or phase-modulated interferogram analysis. The Optowave 40 provides flexibility to handle today's applications at an unprecedented value.

Applications:

- Transmission and surface testing of small optics
- Measure optics, machined parts, ceramics, semiconductors, and wafers
- Integrated ROC measurements

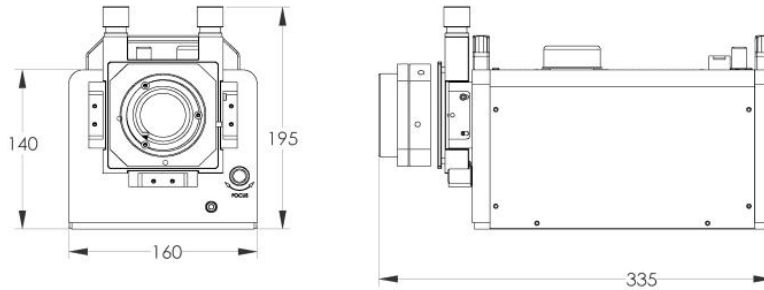
Features and Benefits:

- 6x zoom for measuring parts as small as 0.5 mm diameter
- 3 modes of interferogram analysis - Phase shifting, IntelliPhase™ - static spatial carrier analysis, or Fringe Tracing (automated or manual)
- Small size and form factor design allows easy integration into OEM systems
- Compact, rugged design
- Transmission Spheres from F/0.7 to F/6.0



IntelliWave™ Software Features:

- ▶ Phase-shifted or static acquisition and analysis
- ▶ Peak-to-Valley, RMS measurements, Strehl Ratio
- ▶ Zernike and Seidel analysis
- ▶ Diffraction analysis (PSF, MTF, Encircled Energy)
- ▶ Geometric analysis (Geometric Spot Diagrams, Encircled Energy)
- ▶ Automation for factory floor applications
- ▶ Power filtering and averaging features for noisy data
- ▶ Interface with MATLAB™, IDL™, MS Excel™, and LabVIEW™
- ▶ IntelliPhase™ – static spatial carrier analysis



Technology System	Phase Shifting and/or IntelliPhase™
Test Beam	38 mm (1.5")
Zoom	6x, manual
Focus	+/- 1.5 mm, manual
Intensity	Rotary dial
Alignment	Simple two spot alignment
Alignment View	+/- 1.5°
Part Viewing	Live video on computer screen
Performance ¹	
Repeatability 3-Flat ²	$\lambda/300$ PV
RMS Repeatability ³	$\leq 1 \text{ \AA}$
Calibrated Accuracy	$\lambda/100$
Height Resolution	$\lambda/8000$
Spatial Resolution	640 x 480
Fringe Resolution	180 fringes
Digitization	8 bits
Acquisition Time	<300 ms
Averaging Modes	Intensity and Phase
Laser Beam	
Source	Helium-Neon, 632.8 nm, < 1 mW (other wavelength options available)
Polarization	Linear
Coherence	$\geq 100 \text{ m}$
Electrical Power	
	110/240 V, 50/60 Hz, 50 W
Mechanical	
Dimensions	140 x 165 x 254 mm 5.5 x 6.5 x 10.00 in.
Weight	7.25 kg 16 lbs.
Environment Requirements ⁴	
Temperature	15-30°C 59-86°F
Rate of Temp. Change	<1.0°C/15 min
Humidity	Relative 5% to 95%, no condensing
Vibration Isolation	Required for frequencies 1 - 120 Hz

Configurations:

- Vertical and horizontal
- Static or Phase-Shifting
- Radius of curvature

Accessories:

- Reference optics
- Video printer
- Desktop isolation tables

Computer Workstations:

- State-of-the-art computer workstation with IntelliWave™ software pre-installed
- All hardware interfaces pre-installed for complete Optowave 40 interferometer data acquisition

IntelliWave™ Software:

- Five polynomial sets to choose from
- Diffraction and geometric analysis
- Derivatives and integrals
- Complex masking including unlimited mask groups
- Fiducials and image transformations
- Measurements: Wavefront, Wedge, Angle, Prisms, 3-Flat Test, Two Sphere Test, Homogeneity
- Interfaces: MATLAB™, IDL™, LabVIEW™, Excel™
- IntelliPhase™ – static spatial carrier analysis

Reference Optics									
F/#	TS						RS	TF	
	0.7	1.0	2.0	3.0	4.0	6.0	6.5	40	
Diameter (mm)	40						40	40	
Accuracy	$\lambda/10$						$\lambda/15$	$\lambda/20$	



Be certain to read the instructions for use before using the equipment

1) Vibration free environment with temp. change < 1°C/15 min. between 20-23°C, no thermals
 2) 3 sigma repeatability of 3-Flat Test with 32 averages per set
 3) 3 sigma of the rms for 128 data sets, each an average of 32 measurements
 4) These parameters state conditions which the system can operate; they do not represent the environmental stability required to meet performance.