

OPG's Point Source Microscope

3-D Non-contact Alignment Tool



PSM Specifications

Dimensions	189 x 107 x 31mm with 100mm tube lens objective and camera
Weight	600g including Nikon 10x SLWD objective and Flea camera
Mounting	M6, M4, 1/4-20, and 8-32 tapped and labeled holes, M8 stud for CMM use
Working Distance	Greater than 20mm with select Nikon objectives
Lateral Sensitivity	Sub-micron, depends on objective magnification
Axial Sensitivity	±2 μm with a 20x objective
Angular Sensitivity	±1 arc second when used as an autocollimator, no objective
Video Camera	Point Grey Flea 1024 x 768 pixels, 8-bit mono, 30 fps via Firewire; other C/CS mount cameras 1/3" format, color or monochrome possible
Light Sources	Internal—full field LED and laser diode point source, software control; bright setting of laser diode for room light initial alignment External—FC/APC connector for user supplied external fiber source
Computer	Desktop or laptop with Firewire interface, Windows XP Pro
Software	PSM Align® software for real-time alignment and control
Electrical	LEMO connector, +5V 200mA, 3 TTL, 2
Computer Interface	USB based for control
Objective Mounts	RMS (standard), RMS right angle, Mitutoyo, C-mount, Thorlabs SM1

POINT SOURCE MICROSCOPE (PSM)

Designed to aid in the alignment of a centered optical system whose elements included spherical lenses, toroidal lenses and spherical mirror segments used off-axis. Alignment meant putting the centers of curvature of all these surfaces on a common axis.

ALIGN & MEASURE

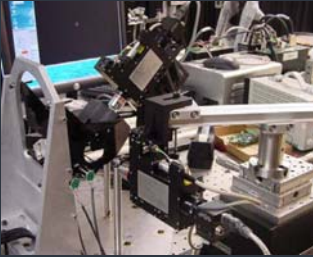
- Holograms
- Off-axis mirrors
- Image slicer mirror arrays
- 3-D systems
- Telescope systems
- Aspheric optics
- Center of curvature
- Paraxial lens parameters
- Sensitive to image shapes



SCI Inc.
Test Instruments

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PSM Applications

- Locate centers of curvatures
- Locates point images
- Aids in holding the image
- Measurement of paraxial lens parameters
- Inspection of optics sensitive to image shape
- To see wavefront errors of a quarter wave or less
- For shops without access to an interferometer
- Aligning holograms
- Aligning machined off-axis metal mirrors
- Aligning image slicer mirror arrays

For more information on the PSM or services please visit us on the Web at:

www.oscintl.com

TECHNICAL SUPPORT

541.255.2165

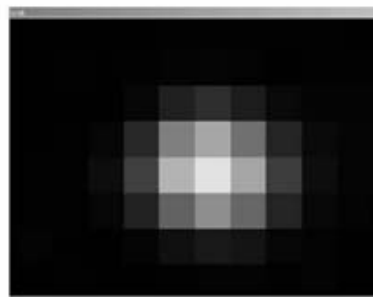
SALES SUPPORT

541.255.2183.



PSM Align[®] software overview

Tabs for adjusting light sources, selecting units, setting reference location and pixel statistics
 Video capture
 Spot / line focus detection and analysis
 Reference and overlay control
 Camera control
 Full field (LED) and point (Laser) control
 Cursor control
 Pixel gray value
 Pixel coordinates



1	1	1	1	2	2	2	2	2	1
1	2	1	2	4	5	3	1	2	2
1	1	1	7	32	46	29	9	3	3
1	2	6	40	127	166	112	36	10	5
2	2	12	63	179	226	165	61	13	5
2	2	6	33	98	141	103	36	8	3
3	1	1	5	15	25	20	6	3	1
1	2	1	1	2	3	3	2	3	1

Video screen zoomed showing a diffraction limited spot and corresponding pixel values.

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