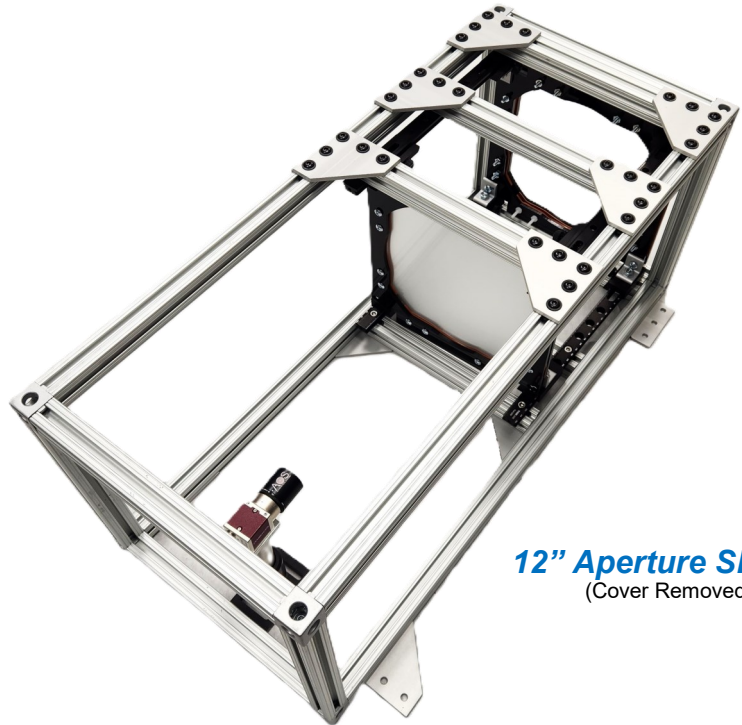


FEATURES

- Typically < $\lambda/10$ RMS wavefront error
- Responsive beyond the silicon band into the infrared including at laser wavelengths including 1319 nm, 1550 nm, and 1064nm
- Customizable apertures and lens arrays
- Starting at \$19k

APPLICATIONS

- Laser Weapon System Performance Evaluation
- Optical Metrology
- Optical System Alignment

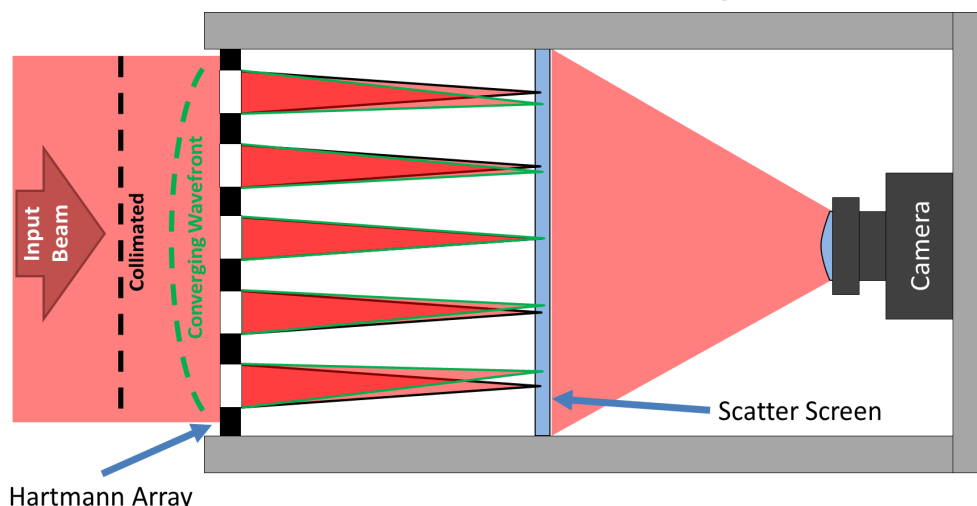


12" Aperture SHARP
(Cover Removed)

DESCRIPTION

In addition to the standard AOS WFS product line, AOS also produces large aperture Hartmann or Shack-Hartmann wavefront sensors to fulfill industry demand. Known as the AOS Shack Hartmann for Assessment of Response and Performance, or SHARP, it features a large format input customizable to 18" and beyond designed to enable measurement of the output of laser weapons systems directly. Light from the system is sampled by either a lens array (Shack-Hartmann architecture) or an aperture array (Hartmann architecture), propagated to a scatter screen at the focus of the lens array or at full diffraction from the aperture array. The scatter screen is then imaged onto a camera for processing with AOS's standard wavefront sensor processing software. For high power operation, the SHARP system includes a large aperture sampling optic for leakage through a large aperture high reflectivity mirror.

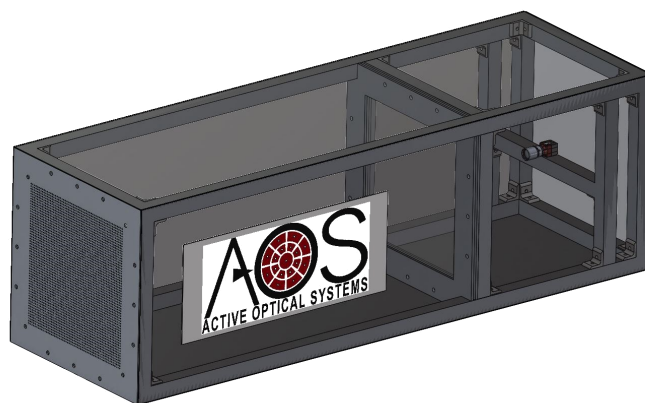
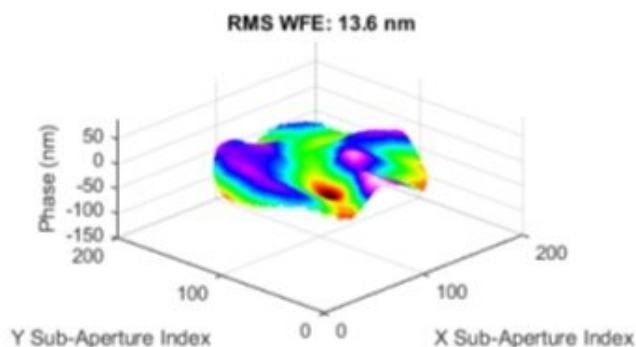
Cross-Sectional Operation Diagram



SPECIFICATIONS

Parameter	Units	Design 1	Design 2	Design 3	Design 4	Design 5	Notes
Lateral Spatial Resolution	N/A	100	50	20	40	40	
Input Aperture Diameter	mm	304.8	304.8	304.8	457.2	457.2	Scalable to almost arbitrarily larger sizes.
	inch	12.0	12.0	12.0	18.0	18.0	
Design Wavelength	nm	1064	1064	1064	1064	1064	
Array Pitch	mm	3.048	6.096	15.24	11.43	11.43	
Vertical Camera Pixels		4608	4608	4608	4608	4608	Alvium G5-2460
Full Frame Acquisition Max Rate	Hz	4.8	4.8	4.8	4.8	4.8	NOTE: Faster with ROI; Slower with real-time processing
Pixels Per Sub-Aperture		46.08	92.16	230.4	115.2	115.2	
Array to Screen Distance	mm	87.31	349.26	2182.87	1227.87	1227.87	
Centroid RMS	microns	1654	1654	1654	2480	2480	Good SNR
Slope RMS	mrads	18.9	4.7	0.8	2.0	2.0	
RMS WFE	nm	289	144	58	115	115	
	λ by	3.7	7.4	18.4	9.2	9.2	
Max Tilt	mrads	10.47	5.24	2.09	2.79	2.79	
Tilt PV	mm	3192	1596	638.4	1276.8	1276.8	
Highest Order PV	microns	31.92	31.92	31.92	31.92	31.92	

12" Aperture SHARP Phase Measurement



12" Aperture 3D CAD Rendering