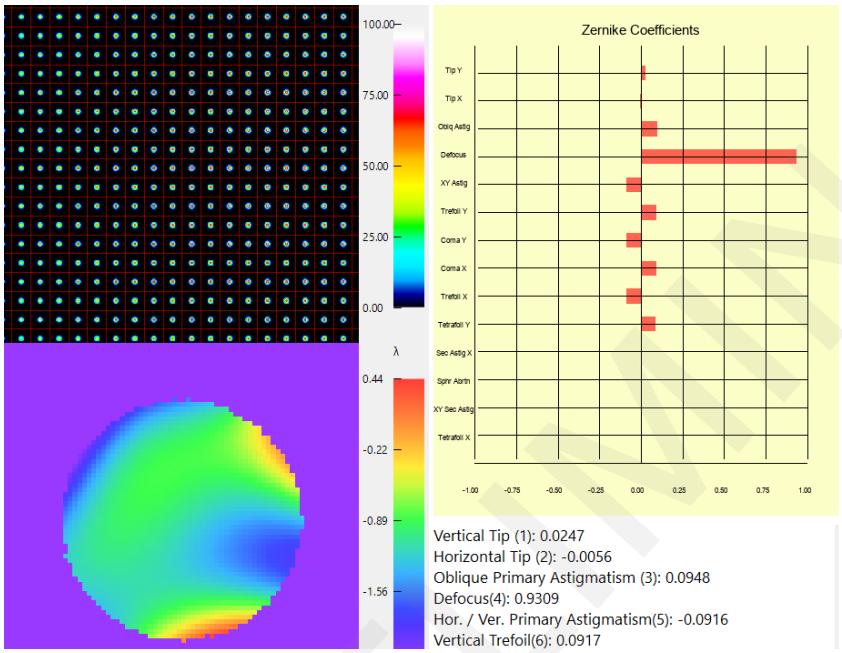
WaveCamD (Coming Q1 2026)

CMOS Shack Hartmann Wavefront Sensor, USB 3.0

The WaveCamD utilizes a Shack Hartmann wavefront sensor with microlens array (MLA) to produce accurate, high resolution wavefront measurements. The MLA consists of a grid of 60 x 60 lenslets with 150 µm pitch, enabling a detailed 2D representation of wavefronts from 355-1150 nm. Both zonal (numerical) and modal (Zernike polynomial) reconstruction methods are available to provide flexible wavefront characterization in a single-shot.

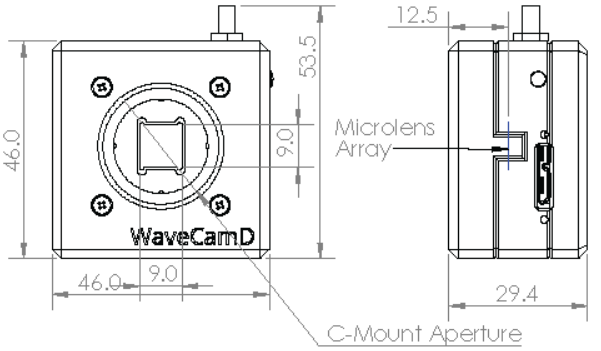


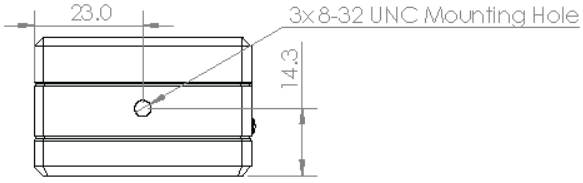
The WaveCamD is paired with DataRay's full featured software which has no license fees, unlimited installations, and free software updates. It's ideal for applications including: CW and pulsed wavefront measurements, zonal or modal wavefront reconstruction, field servicing of optical components and processes, one-shot beam alignment including pointing, beam collimation, and lens inspection.

System Features

- 355-1150 nm
- 9 x 9 mm AR coated microlens array (MLA)
- 60 x 60 lenslets, 150 µm pitch, 5.2 mm focal length
- λ/30 wavefront accuracy, λ/100 sensitivity
- Zonal (numerical) and modal (Zernike) wavefront reconstruction
- 5.5 µm pixels, 4.2 MPixel
- Port-powered USB 3.0
- HyperCal™ – Dynamic Noise and Baseline Correction software
- C-mount filters
- 2,500:1 Signal to RMS Noise
- Global shutter with TTL trigger
- Electronic auto-shutter, 85 µs to 2 sec (44 dB)
- 12-bit ADC
- Compatible with DataRay LaserLink for HTTP communication

Outline and Mounting





Applications

- One-shot wavefront measurements
- Beam collimation
- Real-time beam alignment
- Aberration characterization