
# LAS-UP-VIS™

## Ultra-Precision Centering Station for the Alignment & Inspection of Larger Lens Assemblies

The **LAS-UP-VIS™** is a 0.5m-sized, non-contact lens alignment and inspection station designed from the ground-up for precision lens centration and tilt measurements of single element, doublet, triplet and multi-element lens assemblies with radius ranging from +/- 1 mm to infinity (plano) and diameters from below 1 mm to 600 mm, including spherical, aspheric, cylindrical and parabolic surfaces. All this can be done with a single objective lens allowing for fast and easy measurement.

The core measurement technology is based on focused laser reflection (see LAS Technology). A single-mode optical fiber couples the external Laser Generation Module (LGM) to the on-tool vertically-mounted Optical Module (OM) which houses the focusing optics and large-format array camera(s). Software control of the LGM permits fast switching of wavelengths and optimization of the beam power, resulting in superior imaging of the reflected beam with sub-micron measurement precision. The design of the LGM permits up to two of three visible wavelengths (blue, green & red).

The user friendly **CalcuLens™** Assembly software is standard to all LAS™ models and enables computer automated measurement of the alignment errors of a single lens for rapid bottom-up assembly. Extending the measurement to multi-element lens assemblies requires the optional **CalcuLens™** Inspection software thereby adding powerful inspection capability for the quality assurance of finished lens assemblies. The recent addition of **CalcuSurf-1D™** USB lever probe and profiling software to the LAS™ family of products significantly aids the ease and precision of initial setup, resulting in improved utilization during frequent lens assembly changes.

### APPLICATIONS

- Centering of single lenses
- Cementing lens doublets & triplets
- Centering & bonding of multi-element lens assemblies
- Alignment Inspection of multi-lens assemblies (requires **CalcuLens™ Inspection**)
- Measurement of lens vertex height and air gaps (requires **CalcuLens™ Vertex**)
- Measurement of lens Radius of Curvature (requires **CalcuLens™ ROC**)
- Measurement of lens and assembly beam deviation (requires **CalcuLens™ BD**)
- TIR profiling of rotationally symmetric housings and cells (requires **CalcuSurf-1D™**)

### SYSTEM CHARACTERISTICS

- Cored granite construction on rigid passive vibration isolation stand
- Measurement of larger diameter lenses and assemblies (300 mm ≤ ⌀ ≤ 600 mm)

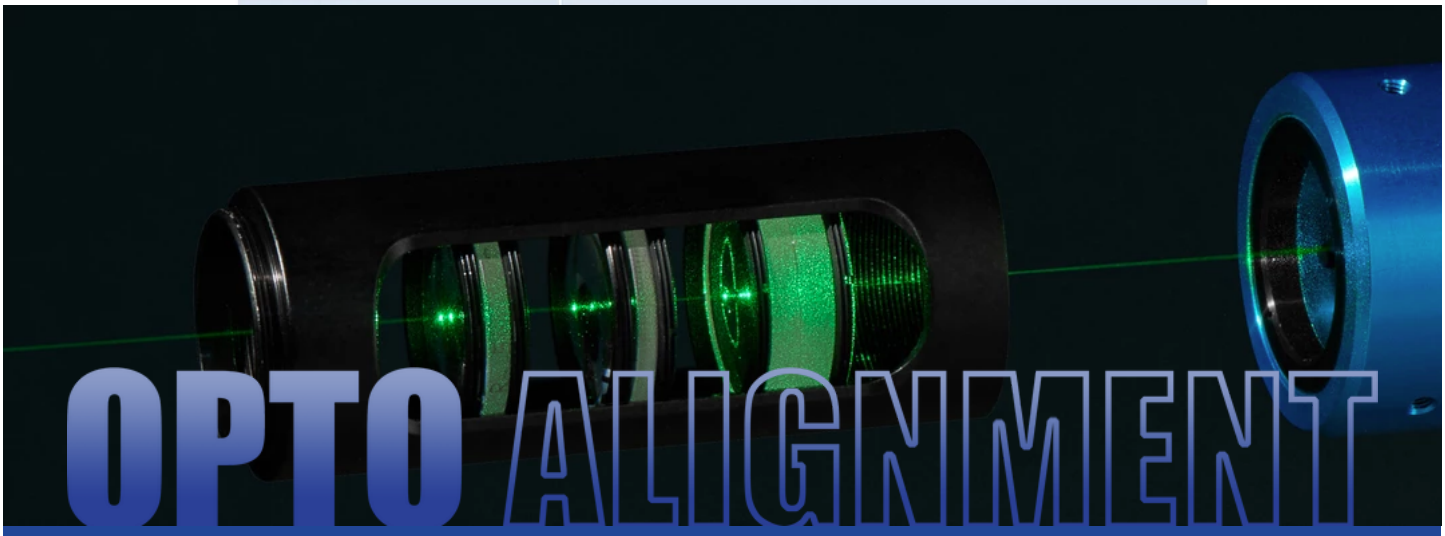
- High-precision (< 50 nm runout) ø300 mm encoded rotary air bearing with integrated centration/tilt stage and vacuum through center
- Precision, motorized & encoded vertical linear stage (travel ≤ 2000 mm)
- High-power green (520 nm) laser, fiber coupled to Optical Module
- 90 mm Working Distance (WD) objective lens with quick-attached thread for accessories
- User-friendly **CalcuLens™ Assembly** software and data reporting functions conforming to ISO standards
- Sub-micron centration accuracy

AVAILABLE OPTIONS

- Red (660 nm) or Blue (460 nm) laser
- Extended vertical focusing travel 1500 mm – 2000 mm
- High-precision (< 50 nm runout) ø400 mm encoded rotary air bearing with integrated centration/tilt stage and vacuum through center
- Add motorized direct drive to manual rotary air bearing
- Extended worktable diameters Ø400 mm – Ø600 mm
- 20 mm, 30 mm, 40 mm, 150 mm & 200 mm Working Distance objective lens adapters
- Glue dispensing and UV cure stations
- Reticle alignment accessory
- **CalcuLens™ Inspection** software for measuring alignment of multi-lens assemblies
- **CalcuLens™ Vertex** software for measurement of lens vertex height of tall lens assemblies and lens thickness and air space of shorter assemblies
- **CalcuLens™ ROC** software for measurement of lens radius of curvature
- **CalcuLens™ BD** software for measurement of lens boresight/beam deviation
- **CalcuSurf-1D™** precision USB lever probe with digital gage and real-time profiling software
- **DMI-200** Low-coherence Distance Measurement Interferometer for center thickness and air space measurement of tall lens assemblies
- **3D-SPM** Surface Profiling Module for LAS
- **ROTOwand™** for vacuum lens pick-up & handling

SPECIFICATIONS

| SYSTEM | |
|---|---|
| Dimensions (L : W : H) | 1200 x 1300 x 3100 [mm] |
| Weight | Approx. 1250 kg |
| Structure | Granite base, cored granite column, heavy-duty stand |
| System Controller | Includes motion control, laser control, power supplies, USB interface to PC |
| Power Requirements | 110-220V AC, 50-60 Hz, 1 phase, 2 amps (220V), 4 amps (110V) |
| Compressed Air Requirements | Pressure 70 PSI (5 bar), Flow 4 CF/Min (0.113 CM/Min), Humidity 40 Dew point, Filter ±0.005 mm |
| **MOTION (VERTICAL)** | |
| Stage Travel (Z) | Standard: 1500 mm, Optional: 2000 mm |
| Encoder Resolution (Z) | 0.1 µm |
| Drive Type | Precision ball screw with micro-stepper |
| Bearing type | Precision square rail |
| Flatness | Approx. 1 µm/100 mm |
| **MOTION (ROTARY)** | |
| Bearing Diameter | Standard: 300 mm, Optional: 400 mm |
| Encoder Resolution | 1 arcsec |
| Drive Type | Standard: Manual, Optional: Direct drive |




Sales@OptoAlignment.com
1034-A Van Buren Avenue
Indian Trail, NC 28079
Tel: (704) 893 - 0399
Hours: 9am - 7pm



Built With Pride In The USA

| | |
|---|---|
| Surface Radii | ±1.0 mm to infinity (Plano) |
| Lens diameter | 1 mm to 600 mm |
| Tilt Accuracy | ± 0.25 arcsec |
| Centration Accuracy | ± 0.1 µm |
| Vertex Height Accuracy | ± 2.5 µm (with 20 mm WD objective adapter) |
| Radius of Curvature Accuracy | ± 0.05% (with 30mm WD objective adapter) |
| Beam Deviation Accuracy | ± 30 arcsec |