



# Davidson Optronics

A TRIOPTICS COMPANY

*Putting Your Future in Focus*

## Two-Axis Autocollimator | D-656

Model D-656 Two Axis Autocollimators excel in measuring two orthogonal planes because both azimuth and elevation readings are obtained with the same dial. This eliminates the error often introduced by autocollimator barrel rotation when alternating between azimuth and elevation positions. The midsection eyepiece has sufficient eye relief for those who wear glasses; also, eye strain is reduced by the dark field reticle with illuminated target (see above) and the distinct black crosshair filar marked to show azimuth and elevation. Turning the micrometer dial causes the filar to travel across the field until the proper line bisects the center of the target. No numbers or scales confuse the field of view, but are carried entirely on the micrometer drum. The D-656 functions efficiently off optically flat surfaces and aluminized surfaces as small as 0.5 inch (13 mm) in diameter.

With the Model D-656V with CCD camera and monitor, readings become very easy even for unskilled personnel. Repeat readings are more accurate and faster. The camera eliminates any errors from parallax and greatly reduces eye fatigue.

The Digital Autocollimator Upgrade Kit allows existing D-656 models to have all the digital functionality of the New Model D-720, Digital Two-Axis Autocollimator.

The upgrade kit replaces the autocollimator eyepiece assembly with a video imager. The included OptiAngle software allows results to be viewed in real-time, statistically analyzed and stored for later reference. The program includes routines for the measurement of angles about orthogonal axes, optical wedges, 90° prism errors, telescope angles and more. Certificates documenting test results are automatically generated.

- **Measure displacement of both axes without adjustment**
- **Compact folded design makes alignment easy**
- **Dark field reticle and external readout reduce eye fatigue**
- **Certification of accuracy traceable to NIST**



### Optional Accessories

- **D-165 High Intensity Light Source (may be required when autocollimating off of low reflectivity surfaces or small mirrors)**
- **D-247 Table Instrument Stand**
- **D-416B 220V 50Hz Power Supply**
- **104-0160 Autocollimator Alignment Aide**
- **105-2761-656 Video Subsystem (included with D-656V)**
- **104-0170 Digital Autocollimator Upgrade Kit**

2223 West San Bernardino Road  
West Covina, California 91790

Phone: (626) 962-5181  
Fax: (626) 962-5188

[www.davidsonoptronics.com](http://www.davidsonoptronics.com)  
[sales@davidsonoptronics.com](mailto:sales@davidsonoptronics.com)

Specifications		
Accuracy:	0.5 arc sec over one arc min, 3 arc sec over 20 arc min	
Sensitivity:	0.1 arc sec	
Repeatability:	±0.2 arc sec or better	
Measuring Range:	20 arc min	
Seconds Scale:	Graduations 0.2 arc sec	
Minute Scale:	One revolution equals one arc min. Counts the revolutions of Seconds Scale; graduated from 0 through 20 arc min	
Reticle Pattern:	Dot with illuminated rings	
Aperture Diameter:	2.375 inch (60 mm)	
Focal Length:	20 inch (508 mm)	
Measuring Range:	35 ft ± 10 arc min (11 m)	
@ Long Distances:	125 ft ± 2 arc min (38 m)	
Base:	Azimuth:	±2°
	Elevation:	±2°
Light Source:	Incandescent lamp with D-416, 6 VDC variable power supply 110V/ 60Hz or 220V/ 50Hz	
Finish:	Ivory enamel	
Carrying Case:	Hardwood, fitted for instrument and light source	
Weight:	21 lbs (9.5 kg)	
Shipping Weight:	40 lbs (18.1 kg)	



**Davidson Optronics**

A TRIOPTICS COMPANY

*Putting Your Future in Focus*