Davidson Optronics
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Putting Your Future in Focus

5 Inch-Aperture Autocollimator | D-652

The D-652 Coordinate Autocollimator combines a 5 inch (127 mm) aperture with a 26 inch (660 mm) focal length optical system into an 18 inch (457 mm) long instrument. The short-coupled design and the midsection eyepiece make it possible for one operator, while viewing through the eyepiece, to adjust one or more mirrors without assistance.

Model D-652 Autocollimators measure angles around an X-Y axis or intermediate points between obliquely tilted surfaces. The filar bisection of the target gives a corresponding read-out in arc minutes and seconds on the adjoining micrometer drum, either for azimuth or elevation. Azimuth and elevation adjustment are quickly made with fine thread adjustment screws mounted in base.

There are no screws to loosen or tighten and no distracting numbers or scales in the field of view. This simplicity makes the D-652 very useful for aligning polygons, precision rotary tables, optical systems and laser optics. Several reflectors can be accommodated simultaneously with the 5 inch (127 mm) aperture. This feature saves the cost of a second autocollimator.

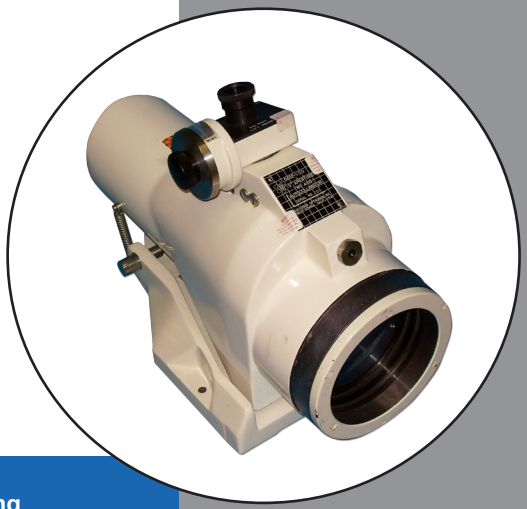
The D-652-103 has a filar eyepiece that rotates 90° and a readout dial toward the rear of the instrument, otherwise it is identical to the D-652-101.

The Model D-652 Autocollimator is also available in a configuration optimized for operation at near-infrared wavelengths.

The Digital Autocollimator Upgrade Kit allows existing D-652 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.

- **Large aperture accommodates several reflectors**
- **Compact folded optical design makes alignment easy**
- **20 arc minute measuring range**
- **Built-in adjustable mounting base**
- **Center tilted eyepiece for easy viewing**
- **Dark field projected 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**
- **104-0160-652 Autocollimator Alignment Aide**
- **105-2761-652 Analog Video Subsystem**
- **104-0170 Digital Autocollimator Upgrade Kit**

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Specifications

Readout:		The second dial is graduated in divisions of 0.2 arc sec, with each arc sec indicated by an extended graduation line and every fifth second numbered. The minutes dial is graduated and numbered 1 through 20 with every number equal to one revolution of the seconds dial (60 sec)
Filar Reticle:		Crosshair with elevation line defined “EL” and azimuth line defined “AZ”
Target Reticle:		Illuminated concentric circles, approx. 2 arc min apart, around an illuminated centered dot, approx. 10 arc sec in diameter, all on a dark field
Measuring Range:		20 arc min
Accuracy:		0.5 arc sec over one arc minute, 3 arc sec over 20 arc min. (Calibration curve over full range at nominal cost.)
Sensitivity:		0.1 arc sec
Repeatability:		0.2 arc sec (standard deviation)
Operating Distance:		At 50 ft the measuring range is ±10 arc min (15.2 m)
Power Source:		110V/ 60Hz or 220V/ 50Hz
Eyepiece Magnification:		12X
Aperture Diameter:		5 inch (127 mm)
Focal Length:		28.625 inch (727 mm)
Base:	Elevation:	± 1.5°
	Azimuth:	± 1.5°
Overall Dimensions: (H x W x L)		12 x 9 x 18 inch (305 x 229 x 457 mm)
Base Plate Dimensions:		13 x 9 inch (330 x 229 mm) Mounting holes provided
Center Line of Sight to Mounting Surface:		4.5 inch (114 mm)
Finish:		Ivory enamel
Carrying Case:		Fiber glass
Weight:		50 lbs (22.7 kg)
Shipping Weight:		90 lbs (40.8 kg)

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