

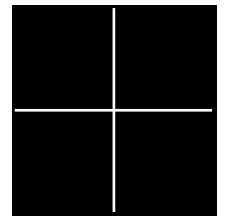
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ELWIMAT®-AKF Digi 2000

Electronic Auto Collimator with μ rad-accuracy

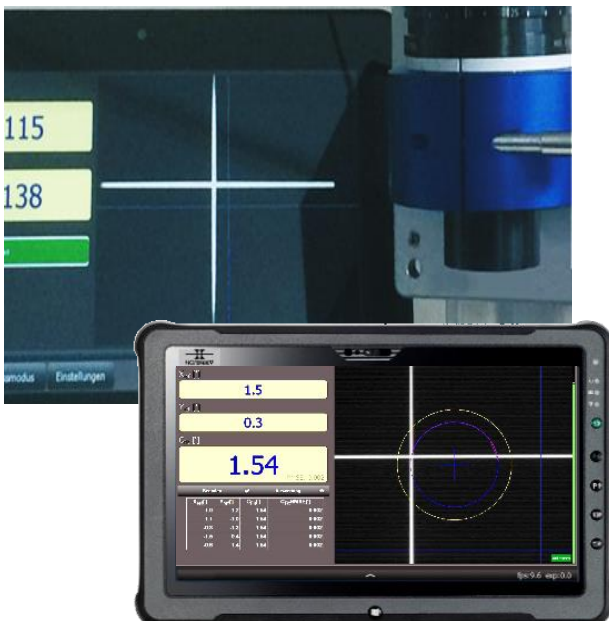
The ELWIMAT-AKF Digi 2000 is a compact, electronic autocollimator with high-precision, distortion-free optics and integrated camera as well as powerful LED illumination.



Advantages:

- Novel, diffraction-limited adjustment of focus
- Minimization of random and systematic errors
- Error-free evaluation of angle measurement
- Pixel-accurate evaluation with Camera Manager
- Subpixel evaluation with Software ELWISOFT
- Intuitively operable software ELWISOFT
- ELWISOFT - High accuracy and linearity with mapping
- High accuracy even with vignetting effects at larger distances
- Modern GUI to use on tablet Apps via wireless communication
- Integration into existing components at customer via JSON protocol

For applications at anti-reflective surfaces, the wavelength can be selected between 405 and 905 nm.



available as PC and stand-alone version

Fields of Applications:

- Angle measurement of optical and mechanical assemblies
- Adjustment of opto-mechanical components
- Centering measurement on lenses, aspheres and cylinders
- Radius measurement at short radii
- Radius measurement at long radii
- Angular deviation on 90 ° prisms, 45 ° prisms
- Wedge measurement of optical components
- Measurement of radii/ wedge angle on cylindrical lenses
- Measured value monitoring and documentation
- Industry 4.0 application
- PC-version or rugged IP65-Touch-Modul

Module for development environment

The Software offers various interfaces as RS232, USB, RJ45 and communication via TCP-IP and JSON. It allows direct access to control the data acquisition and connection to the own laboratory environment even for research and development activities.

Process measurement sequence control

Process-modules are used for serial manufacturing like:

- Wedge angle measurement
- Centering measurement on lenses and cylinders
- Prism measurement
- Radius measurement on spheres and cylinders

Easy 2x to 128x Zoom functionality

To zoom in is very easy by touching on the screen (Touch version) or clicking the mouse at the field to be magnified.

Tolerance fields with color change

Tolerance fields can be defined and displayed in the screen as a circle, square or rectangle. The digits are displayed in corresponding 'signal colors' when crossing tolerance field.

Real-time capability / external trigger

The subpixel accurate measured values can be retrieved on demand in real time, saved in tables and exported as a csv file. An external trigger input facilitates synchronization with the customer's processes.

Technical data for standard versions

Focal length/ Tube Diameter	50/40	80/40	100/40	140/40	200/40	300/40	200/65	300/65	560/65 ⁵⁾
Number of Measurement Axes	2	2	2	2	2	2	2	2	2
Measurement range 2w ¹⁾ / °	4,0°	2,2°	1,8°	1,25°	0,9°	0,6°	0,9°	0,6°	0,3°
Pixel resolution ²⁾ / wsec	7,1“	4,5“	3,6“	2,5“	1,8“	1,2“	1,8“	1,2“	0,64“
Resolution recommended / wsec	0,1“	0,1“	0,1“	0,1“	0,1“	0,01“	0,01“	0,01“	0,01“
Resolving Power R ³⁾ / wsec	0,4“	0,25“	0,2“	0,13“	0,09“	0,06“	0,09“	0,06“	0,03“
Wavelength of LED W / nm	U=405 / B=480 / G=530 /R=630 /N=880 /I=905								
Clear Aperture / mm	9,6	28	28	28	28	28	48	48	48
min. Reflector Ø / mm @R > 60 %	1	1,8	2,2	3	4	6	4	6	12
min. Reflektor Ø/ mm @ n=1,5	3,8	6	7,6	11	15	23	15	23	38
Weight AC-Sensor / kg	0,7	0,8	0,8	0,8	0,9	1	2,3	2,5	2,0
Dimensions AC-Sensor	Ø 40 f8; 107 x 62 x 110 mm ³						Ø 65 f8; 107 x 62 x 110 mm ³		
Interface	USB 3.0 / HDMI								
Scope of Delivery	Autocollimation Sensor, Sensor cabel, (Software, Mapping file as an option)								
Accuracy, Linearity ⁴⁾ / arcsec	< 1% of measured value +2 R								
Order no.Best. Nr.	801 10C	801 10A	801 10B	801 103	801 104	801 105	801 106	801 107	Anfrage
min. Reflektor Ø/ mm bei R = 0,4 %	1,3	2	2,5	3,5	5	7,5	5	7,5	13
Order no. for ‚Low Light‘	801 10X LW4								
Scope of Delivery	Autocollimation Sensor, Sensor cable, rugged Touch-Modul w. integrated Mapping								
Accuracy, Linearity ⁴ / arcsec	2,5 ⁴⁾	1,7 ⁴⁾	1,3 ⁴⁾	1 ⁴⁾	0,7 ⁴⁾	0,6	0,7 ⁴⁾	0,6	0,4
Order no.	801 30C	801 30A	801 30B	801 303	801 304	801 305	801 306	801 307	request

1) In X-Direction; Y-dir. = 0,75 X; dependent on working distance (applies up to a distance of about 1.5 to 3 times the focal length)

2) With supplied driver or with evaluation software and pixel resolution

3) Simple standard deviation of the difference from measured value to the setpoint (subpixel evaluation with software ELWISOFT)

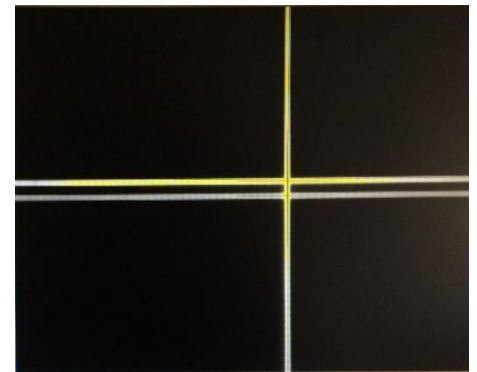
4) Over a partial span of ±1000 arcsec (± 0,28°)

Accessories:

For Measurement range expansion or high precision readout up to 0,001 arcsec we recommend our Beam Converter 4x.

Four times higher measurement range or four times higher Resolving Power and Accuracy with an optical Telescope adapter.

Nov. 2025



Application of wedge angle measurement via double cross



Centering measurement with tolerance field circle