OPTIK · MESS- UND PRÜFTECHNIK
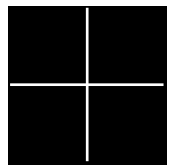VERTRIEB · BERATUNG · TRAINING

HOFBAUER

ELWIMAT-AKF Digi 2000
Electronic autocollimator with μrad-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 1050 nm.

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

Laboratory module for development environment

A laboratory module offers various interfaces such as RS232, USB, RJ45 and communication via TCP-IP and JSON. It allows direct access to the control of 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
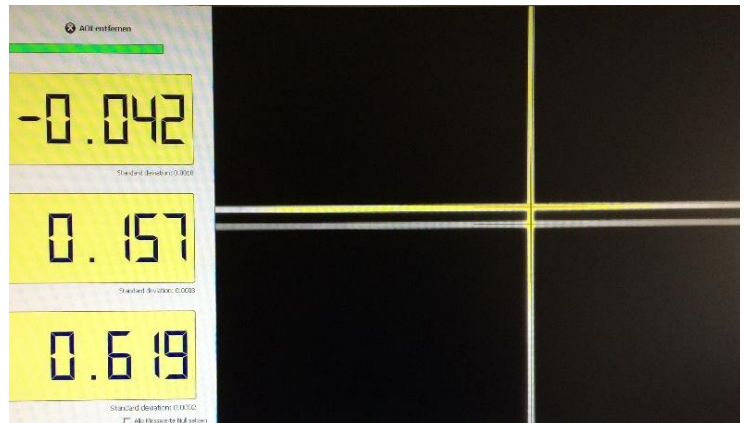- Radius measurement on spheres and cylinders

Easy 4x to 128 times 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. At centration measurement, you can work with autozoom.

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.
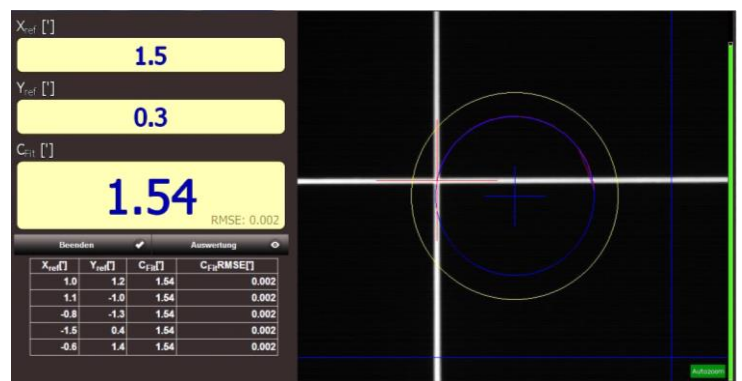
Real-time capability / external trigger

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.

Fig.: Application of wedge angle measurement via double cross

Fig.: Centering measurement with tolerance field circle

Technical data for standard versions

Focal length/ Diameter	46/40	90/40	140/40	200/40	300/40	200/65	300/65	500/65
Number of measurement axsis	2	2	2	2	2	2	2	2
Measurement range 2w*/ °	4,0°	2,0°	1,25°	0,9°	0,6°	0,9°	0,6°	0,36°
Pixel resolution/ arcsec **	10"	5"	3,6"	2,4"	1,8"	2,4"	1,8"	1,2"
Resolution estimation***/ arcsec	0,5"	0,2"	0,2"	0,1"	0,1"	0,1"	0,1"	0,05"
Reproducibility R***/ arcsec	0,5"	0,3"	0,2"	0,15"	0,1"	0,15"	0,1"	0,05"
Wavelength of LED / nm	405 / 480 / 530 / 630 / 880 / 1050							
Free Aperture / mm	9,6	20	28	28	28	48	48	48
min. Reflektor Ø/ mm @R > 60%	1	2	3	4	6	4	6	10
min. Reflektor Ø/ mm @R = 4%	4	8	12	16	24	16	24	40
Weight AC-Sensor / kg	0,7	0,7	0,8	0,9	1	2,3	2,5	3
Dimensions AC-Sensor	Ø 40 f8; 107 x 62 x 110 mm³					Ø 65 f8; 107 x 62 x 110 mm³		
Interface	USB 3.0							
Scope of delivery	Autocollimation sensor, Sensor cable, Camera driver (Software, Mapping file as accessory)							
Acucracy, Linearity	< 1 % of measured value + 2R							
Order no.	801 101	801 102	801 103	801 104	801 105	801 106	801 107	801 108
Scope of delivery	Autocollimation sensor, Sensor cable, rugged Touch-Modul with integrated Mapping file							
Accuracy, Linearity / arcsec	2,5	1,5	1	0,7	0,6	0,7	0,6	0,4
Order no.	801 301	801 302	801 303	801 304	801 305	801 306	801 307	801 308

* in X- Direction; depending on the working distance (applies up to a distance of about 1.5 to 3 times the focal length); Y-dir. = 0,75*X
** with supplied driver or with evaluation software and pixel resolution
*** simple standard deviation of the deviation from the setpoint with subpixel evaluation with software ELWISOFT-Base

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