

Modular Centering Devices MZM / AZM

Cementing and Blocking – Adjustment and Measurement

For quality assurance in production metrology optics

Benefits and advantages

- Safety in measurement technology
- Manageable tolerances
- Shorter measuring/ testing and throughput times
- Intuitive Touch-Software ELWISOFT
- Subpixel evaluation with ELWISOFT-Base
- High precision and linearity with mapping
- Scalable system with additional accessoires

Preliminary data sheet

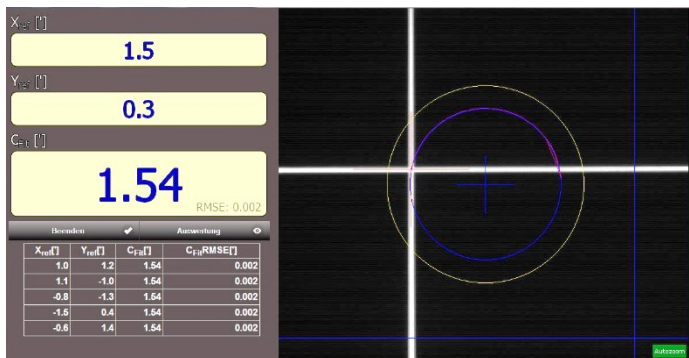


Fig: Centering software module also for multi-lens applications

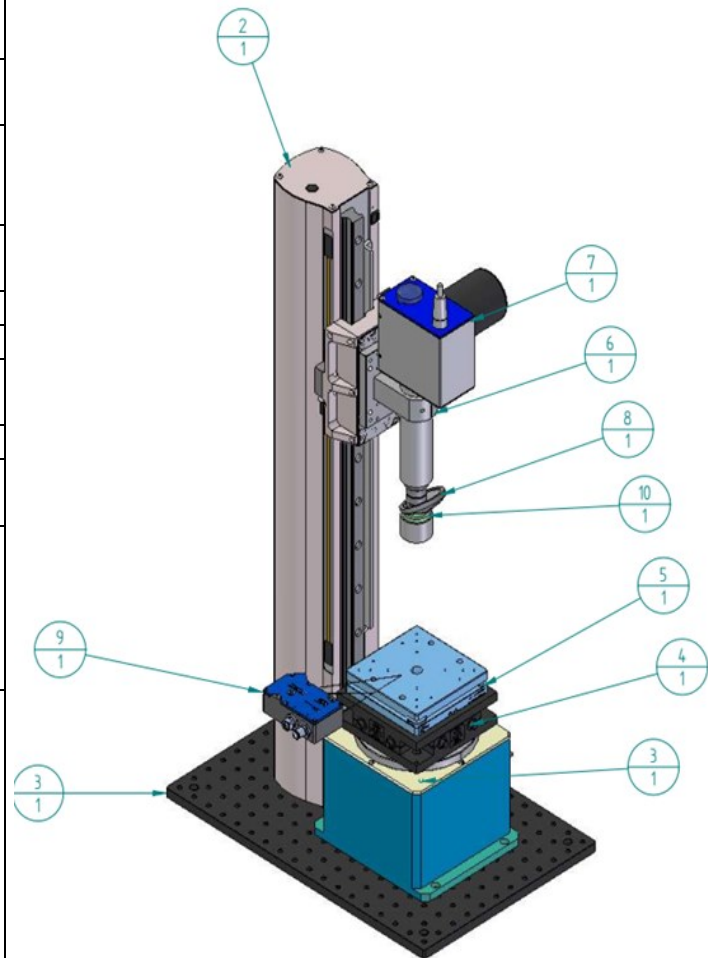
Areas of Application

- Blocking of semi-finished products on mandrel
- Centering of opto-mechanical devices
- Cementing processes and lens assembly
- Adjustment of opto-mechanical components
- Radius measurement on small radii < 1000 mm
- Radius measurement on huge radii > 1 m
- Radii and wedge angle on cylindrical lenses
- Monitoring and documentation



Overview of possible components of the variants

Pos. Nr.	Am	Title	Item Nr.	Info	Info
1	1	Stand plate	MB3045/M MB3045/M2i	300x300 300x450	d = 12,5 d = 45
2	1	Stand 510/ 630/ 1050	VM3-HO03 man. VM3-HO03M motorised	Range	510 mm 630 mm 1050mm
3	1	Air Bearing Rotary table	EK100 motorised	0,1 µm	0,2 wsec
4	1	Linear Stage	M-406	Range	16 mm
5	1	Tilting platform	6T_MTS_125	Angle	± 2 °
6	1	Bearing block D40	800 077 00d		
7	1	ELWIMAT-AKF	140/40 LG4		
8	1	Lens Turret	3x, 4x manual 5x motoric		
9	1	Distance sensor tbd.	Type/ range PNBC001 4 mm PNBC002 10 mm PNBC003 20 mm PNBC004 50 mm	Resol. 0,06 µ 0,15 µ 0,3 µm 0,8 µm	Accuracy 2 µm 5 µm 10 µm 25 µm
10	n	Attachment lens tbd.	800 1xx Ø40 x 30 M36 x 0,75	-500 -800 -1000 -1300 -2000	50 100 140 200 300 500 800 1000 1300 2000
11	n	Support mandrel (ring edges)	800 080 xxx	2 to 60 mm	M8



Accessoires for different applications

- Support mandrels of POM, black Ø 2 to 60mm
- Heidenhain-measurement display ND 280
- Angle/ Beam converter 0,25x / 4x
- ELWIMAT VarioFoc for variable object distances or confocal settings from infinity to +/- 325 mm
- Lens holder with friction wheel drive for quick measuring and for cementing achromats
- V-SPOT sensor for asphere measurement

Software modules ELWISOFT

- Wedge angle-R in reflection
- Wedge angle-T in transmission
- Prism angle measurement (90°, 45°)
- Radius measurement
- Focal length measurement
- Centering software modul MultiLens new
- Centering software modul MultiSPOT new
- Asphere centering module in preparation
- Autofokus module in preparation

Technical Data for AC-Heads

Focal length / Diameter	46/40	80/40	100/40	140/40	200/40	300/40
Number of Measurement axis	2	2	2	2	2	2
Measurement Range 2w* / °	4,0°	2,25°	2,0°	1,25°	0,9°	0,6°
Max. Working Dist. @max. MR	69 mm	350 mm	400 mm	640 mm	900 mm	1300 mm
Pixel-Resolution** / "	7,7"	4,5"	3,6"	2,5"	1,8"	1,2"
Resolution (empfohlen)*** / "	0,5"	0,2"	0,2"	0,2"	0,1"	0,1"
Reproducibility R*** / "	0,5"	0,3"	0,25"	0,2"	0,15"	0,1"
Wavelength LED ww. λ / nm	B = 480 / G = 530 / R = 630 / IR = 880					
Free Aperture / mm	9,6	28	28	28	28	28
Min. Reflector Ø @60% / mm	1	2	2,5	3	4	6
Min. Reflector Ø @4 % / mm	4	8	10	12	16	24
Weight AC-Sensor Head / kg	0,7	0,7	0,7	0,8	0,9	1
Dimension AC-Sensor	Ø 40 f8; 107 x 62 x 110 mm ³					
Interface	USB 3.0					
Lieferumfang	AC-Sensor, Sensor-Cable, Driver, Software (Option: Mapping)					
Accuracy, Linearity	< 0,01 M + 2R / < 0,0005 M + 2R (Mapping)					
Order No.	801 101	801 10A	801 10B	801 103	801 104	801 105
Scope of delivery	AKF-Sensor as Low Light Version, Cable, Driver, Software (Option: Mapping)					
Min. Reflektor Ø @0,4% / mm	6	12	15	18	22	28
Order No. additional	801 101 Lλ4	801 10A Lλ4	801 10B Lλ4	801 103 Lλ4	801 104 Lλ4	801 105 Lλ4
Scope of delivery	AC-Sensor, Sensor-Cable, rugged Touch module with integrated Mapping file					
Accuracy, Linearity / arcsec	2,5	1,5	1,3	1	0,7	0,6
Order No.	801 301	801 30A	801 30B	801 303	801 304	801 305
Scope of delivery	ELWIMAT-AKF VarioFoc, Sensor-Cable, Controller w. Cable, Controller-SW					
Working Dist. / Konfocalpoint symmetric	± 325mm	± 985mm	± 1,5 m	± 3,0 m	± 6,2 m	± 13,9 m
Order No.	806 101	806 10A	806 10B	806 103	806 104	806 105
Working Dist. / Konfocalpoint asymmetric konv. or div. ****	162 mm	490 mm	770 mm	1,5 m	3 m	7,5 m
Order No.	806 201	806 20A	806 20B	806 203	806 204	806 205

* Specification of the measuring range in the X-direction of the rectangular sensor, Y-direction = 0.75*X, depending on the working distance

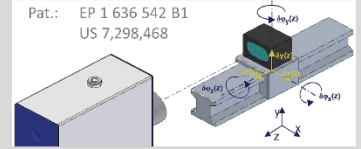
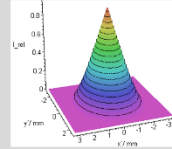
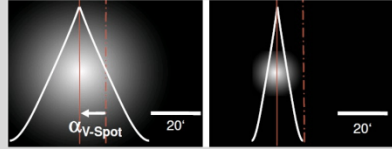
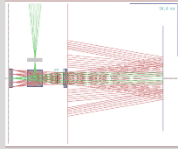
** with the supplied driver or with evaluation software and pixel resolution

*** standard deviation of the deviation from the target value with subpixel evaluation with ELWISOFT-Base

**** Focus points can be set virtually or real ex works; according to the customer's specifications.

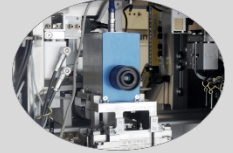
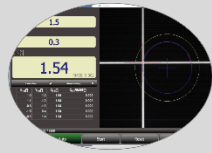
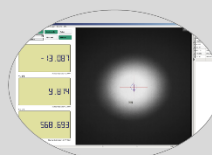
VIGNETTING

Vignetting Field Stop-Procedure VFS according to Dr. Hofbauer



PRODUCTS

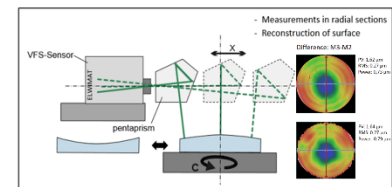
- Collimators & Telescopes
- Auto Collimators VIS - SWIR
- Alignment Telescopes
- Wedge Angle Measurement
- Centration Measurement Systems
- Spherometers SPHEROMATIC H/ HR
- Straightness Measurement Systems
- 3D Measurement Systems
- 6 DoF Measurement Systems



SERVICES

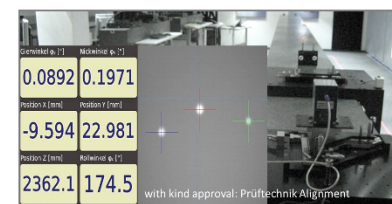
Sampling and Serial Testing

- Prism and Wedge Angle Measurement $< 1''$
- Centration of Spheres/ Aspheres $< 0,02' / < 0,5 \mu\text{m}$
- Radius Measurement $< 0,05 \%$, $6 < \varnothing < 1400 \text{ mm}$
- DaOS on large Mirrors/ Lenses $< \lambda/10$



Calibration even On Site acc. ISO 17025, ISO 230 ...

- Electronic Autokollimators and Goniometers
- Prisms, Wedges and Polygons
- Ball Rings for Spherometers
- Volumetric Compensation of CMM's and WZM's



CONSULTING

Consulting

- Optics and Mechanics Design
- Reverse Engineering (glass, n, v, Radius ...)
- Adjustment Principles & Adjustment Concepts

Training

- Applications in AutoCollimation
- Basics in ISO 10110 vs. DIN 3140
- Interferometric Measurements
- Centration of Spheres and Aspheres
- Straightness- & Alignment Measurement

