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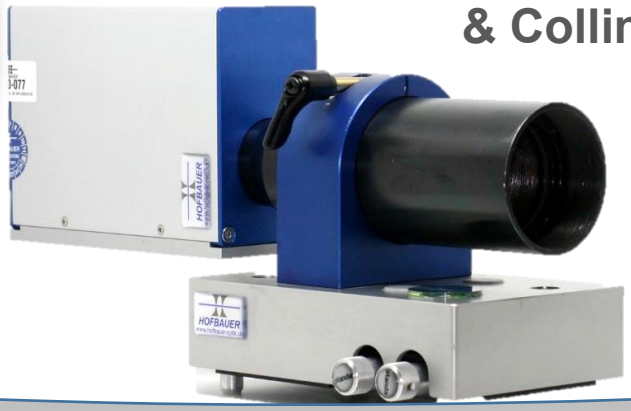
Preliminary

ELWIMAT® VarioFoc

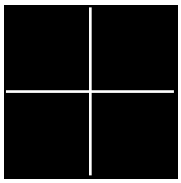
Motorized Focusing AC & Collimators



Fully electronic control for use in automation

ELWIMAT VarioFoc - a compact, electronic autocollimator with a precise focusing function

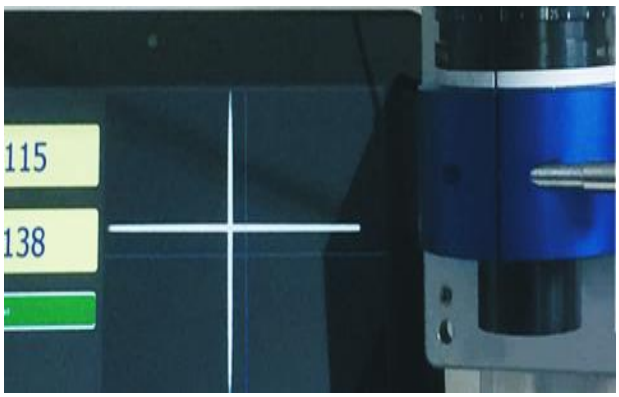
You need variable object distances to evaluate and validate your device under test?
With our variable focus shift auto collimators and collimators you can create any object distances necessary for your test item; e.g. a distance between infinity and 0.2 m or less.



Applications

- Focus error detection for infinite setting
- Variable finite object setting: real – virtual
- Focus deviation measurement on camera modules and LiDAR sensors
- Calibration of cameras and LiDAR-Modules for different distances 10, 100 or 200 m
- Radius measurement at long radii ∞ to ± 200 mm
- Measurement of radii/ wedge angle on cylindrical lenses
- Thickness measurement on flats and lenses
- Centering measurement on lenses, aspheres and cylinders
- MTF-measurement with slanted edge application
- Angle measurement of optical and mechanical assemblies

Wavelength can be selected between 405 and 930 nm.



Advantages:

- Extremely compact design
- Subpixel evaluation with Software ELWISOFT
- Intuitively operable software ELWISOFT
- Modern GUI to use on Touch tablet
- Apps via wireless communication
- ELWISOFT - High accuracy and linearity with mapping
- High accuracy even with vignetting effects at large distances
- Integration at customers via JSON protocol
- Industry 4.0 application

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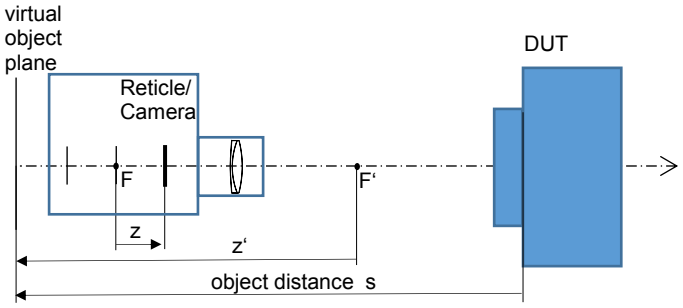
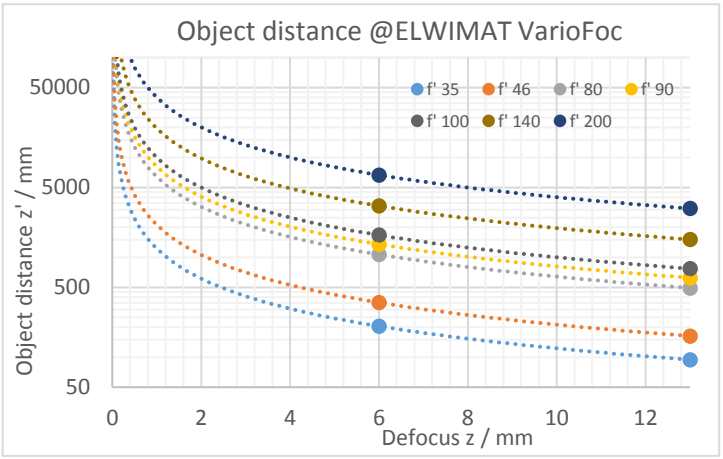
Variable Object distance

In order to create variable and different object distances in shop floor or laboratory we use a variable AC or Collimator with a motorized linear slide to vary the distance of reticle to focal plane. Therefore the image plane will also differ from infinity and set to a finite distance. The graph shows the virtual image distances (to focal point F') depending on defocus z.

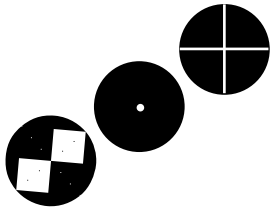




Several Reticles

For different applications you can choose the right target from stock

- Crosshair with 10 µm or 30 µm width
- Pinholes e.g. 20 µm, 50 µm, 100 or 1000 µm
- MTF-Reticle with slanted edge
- Others on request



Technical data for standard versions

Focal length/ Diameter	35/40	46/40	80/40	90/40	100/40	140/40	200/40	200/65
Number of measurement axis	3: Angle φ_y, Angle φ_x, Distance z (z')							
Measurement range 2w*/ °	5,1°	4,0°	2,25°	2,0°	1,8°	1,25°	0,9°	0,9°
Pixel Resolution/ arcsec **	13"	10"	4,5"	3,9"	3,6"	2,5"	1,8"	1,8"
Reproducibility R***/ arcsec	0,7"	0,5"	0,25"	0,2"	0,2"	0,15"	0,1"	0,1"
Travel Range z	13 mm or ± 6,5 mm (see also below)							
Accuracy of linear guide	2 µm							
Wavelength of LED / nm	405 / 480 / 530 / 630 / 880 / 930							
Free Aperture / mm	7,3	9,6	28	28	28	28	28	48
min. Reflektor Ø/ mm @R > 60%	0,7	1	1,8	2	2,2	3	4	4
min. Reflektor Ø/ mm @R = 4%	2,8	4	7,2	8	8,8	12	16	16
Weight AC-Sensor / kg	1,2	1,2	1,3	1,3	1,3	1,3	1,4	2,8
Dimension of AC-Sensor	Ø 40 f8; 154 x 62 x 115 mm³							Ø 65 f8
Interface	USB 3.0, Serial							
Scope of delivery	Autocollimation sensor, Controller, Sensor cables, Software ELWISOFT							
Accuracy, Linearity	< 1 % of measured value + 2R (higher accuracy upon request with mapping file)							
Min. Virtual object distance @z=±6,5	±190	±325	±985	±1.250	±1.540	±3.020	±6.200	±6.200
Order No.	801 100	801 101	801 10A	801 102	801 10B	801 103	801 104	801 106
Min. Virtual object distance @z=13	+ 95	+ 165	+ 495	+ 625	+ 770	+1.510	+ 3.080	+ 3.080
Order No.	801 200	801 201	801 20A	801 202	801 20B	801 203	801 204	801 206

* 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 from the setpoint; subpixel evaluation with ELWISOFT-Base

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