

OPTIK · MESS- UND PRÜFTECHNIK
VERTRIEB · BERATUNG · TRAINING



ELWIMAT VarioFoc Motorized Focusable AC & Collimators

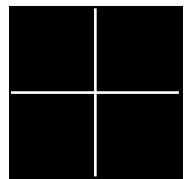


Fully electronic control for use in automation

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

You need variable object distances to evaluate and validate your device under test?

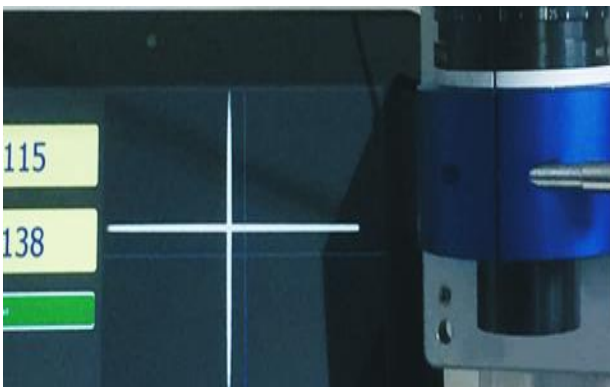
With our variable focus shift auto collimators and collimators you can create any object distances necessary for your test item; e.g. a distance between infinity and 0.2 m or less.



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 905nm.

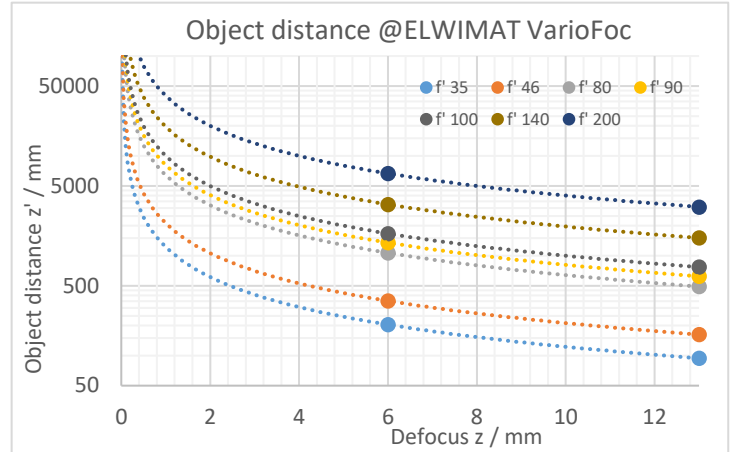
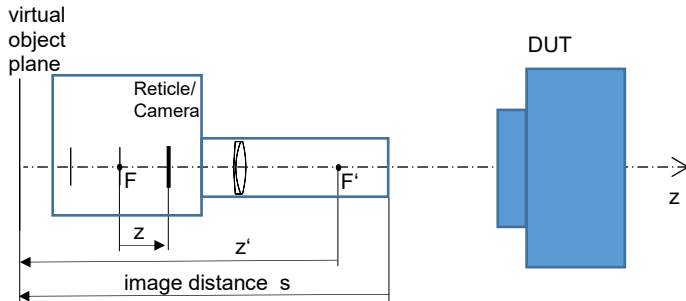


Advantages:

- 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

Variable Object distance

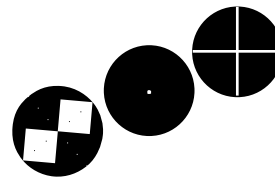
In order to create variable and different object distances in shop floor or laboratory we use a variable AC or Collimator with a motorized linear slide to vary the distance of reticle to focal plane. Therefore the image plane will also differ from infinity and set to a finite distance. The graph shows 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	30/40	50/40	80/40	100/40	140/40	200/40	200/65
Number of measurement axis	3: Angle φ_y , Angle φ_x , Distance z (z')						
Measurement range $2w^{1)}/^\circ$	5,1°	4,0°	2,25°	1,8°	1,25°	0,9°	0,9°
Pixel Resolution/ arcsec ²⁾	11,8"	7,1"	4,5"	3,6"	2,5"	1,8"	1,8"
Reproducibility $R^{3)}/\text{arcsec}$	0,7"	0,4"	0,25"	0,2"	0,13"	0,09"	0,09"
Travel Range z	13 mm or $\pm 6,5$ mm (see also below)						
Accuracy of linear guide	2 μm						
Wavelength of LED / nm	405 / 480 / 530 / 630 / 880 / 905						
Free Aperture / mm	7,3	9,6	28	28	28	28	48
min. Reflektor $\varnothing$ / mm @R > 60%	1	1	2	2	3	4	4
min. Reflektor $\varnothing$ / mm @R = 4%	4	4	8	8	12	16	16
Weight AC-Sensor / kg	1,2	1,2	1,3	1,3	1,3	1,4	2,8
Dimension of AC-Sensor	$\varnothing 40$ f8; 154 x 62 x 115 mm ³						$\varnothing 65$ 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. object distance @z=± 6,5 / mm	± 138	± 325	± 985	± 1.540	± 3.020	± 6.200	± 6.200
Order No.	806 100	806 10C	806 10A	806 10B	806 103	806 104	806 106
Min. virtual image distance s / mm	- 145	- 192	- 450	- 700	- 1.500	- 3.080	- 3.080
Order No.	806 200	806 20C	806 20A	806 20B	806 203	806 204	806 206
Min. real image distance s / mm	+ 55	+ 145	+ 540	+ 800	+ 1.600	+ 3.080	+ 3.080
Order No.	806 300	806 30C	806 30A	806 30B	806 303	806 304	806 306

1) 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

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

3) simple standard deviation from the setpoint; subpixel evaluation with ELWISOFT-Base