



AOL 1825

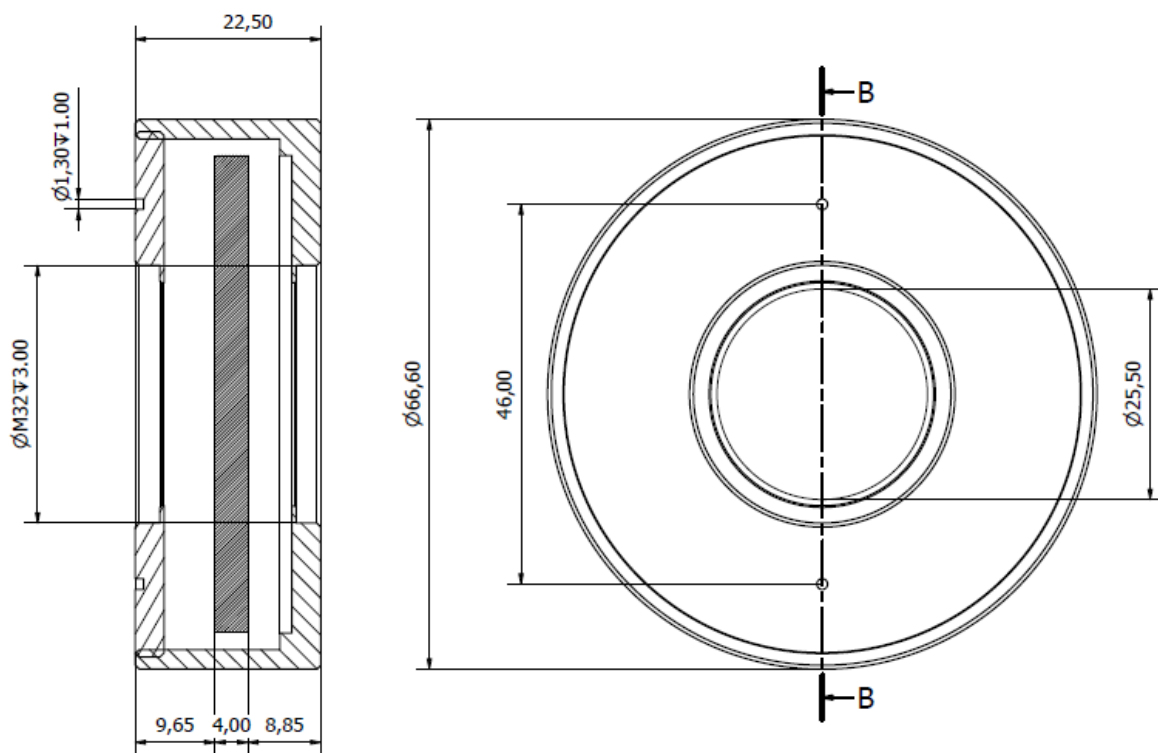
Specification sheet

III SPECIFICATION



AOL1825	
Clear aperture	25.50mm
Diameter	66.60mm
Height	22.50mm
Thickness in the clear aperture	4.00mm
Response time	< 2.5ms

III TECHNICAL DRAWINGS

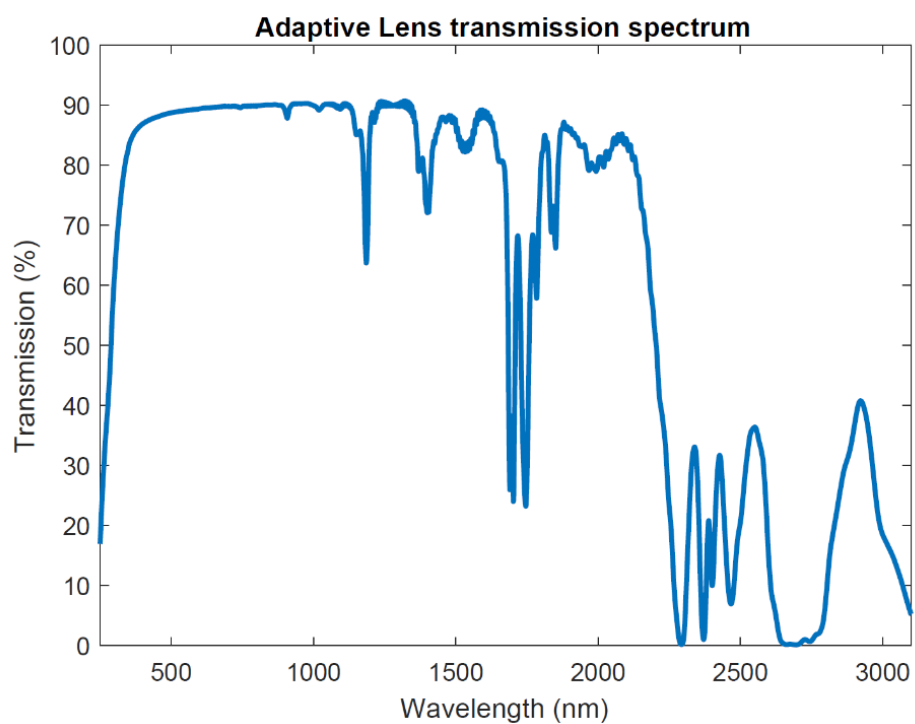


AOL1825.

Zernike Polynomials generation in closed loop (25mm aperture lens, 1wave=0.633nm):

Aberrations	Peak to Valley (waves@633nm)	rms (waves@633nm)
Tip	58.0	14.5
Tilt	58.0	14.5
Vertical Astigmatism	37.5	7.5
Defocus	22.0	6.0
Oblique Astigmatism	37.0	7.0
Vertical Trefoil	22.5	6.5
Vertical Coma	12.1	1.8
Horizontal Coma	12.1	1.8
Oblique Trefoil	26.0	4.1
Vertical Quadrifoil	4.6	0.8
Vertical Secondary Astigmatism	4.9	0.6
Horizontal Secondary Astigmatism	4.9	0.6
Oblique Quadrifoil	4.3	0.8
Primary Spherical	2.5	0.6

Transmission spectrum (uncoated surfaces):





**Multiactuator
deformable lens**

SN05203

AO code: AOL1825

Product specifications

25/08/20

Adaptive optic specifications

AO CODE	AOL1825		
SN	SN05203		
Dimension	2"		
Material	Willow		
Coating	No		
Clear aperture	25 mm		
Notes	-		
Actuators type	Bimorph		
Actuators number	18		
AOL Vflat folder	-		
	Lower limit	Rest	Upper limit
Voltage range	-100V	0 V	125 V
Commands range	-0.8	0	1

Measurements Set-up

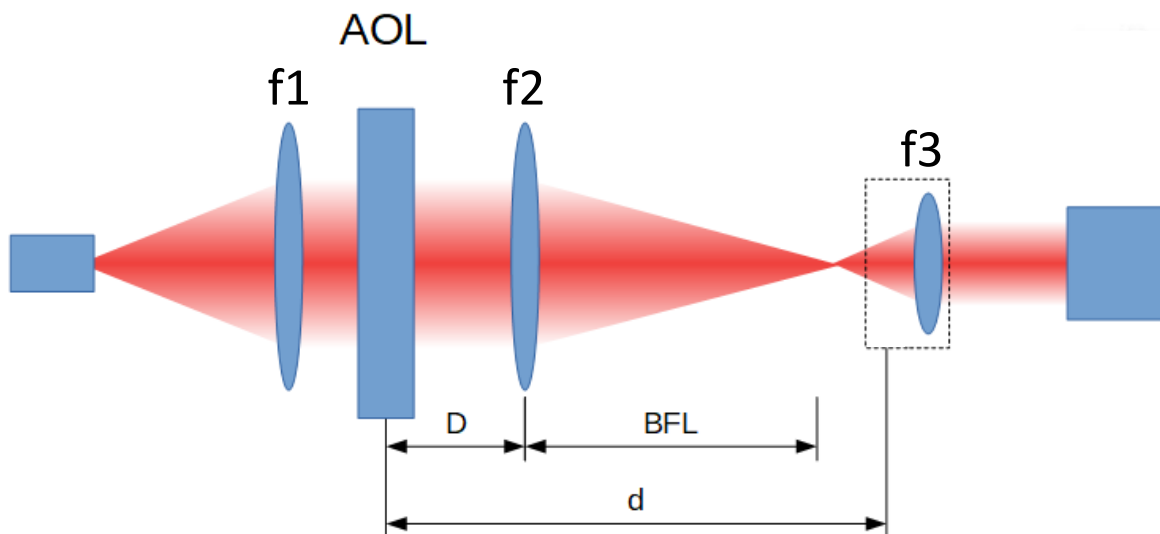
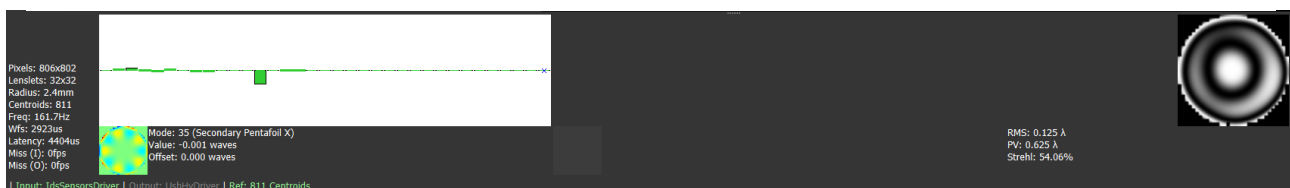


Figure 1: Characterization set-up. From left to right: Laser source, collimating lens ($f_1=200$ mm), adaptive lens, first telescope lens ($f_2=180$ mm), second telescope lens ($f_3=35$ mm). $D=160$ mm, $d=315$ mm, $BFL=180$ mm.



Initial status

Focus shift	0.16 D
Main initial aberration	1.66 RMS@633nm
Grid dimensions	31x31
Temperature	26 °C
Beam diameter (1/e ²)	>> 25 mm



Calibration

Dynamic Range (DR)	50 %
Average	20 frames
Setting time	0.2 s

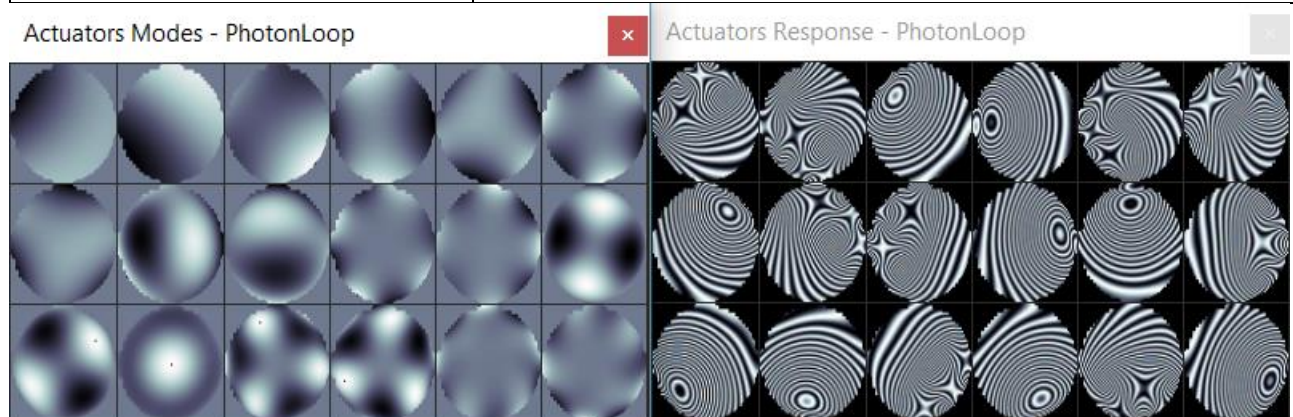


Figure 2 Lens modes and the influence functions.

AO calibration

RMS residual	0.0245 RMS@633nm
Modes used	18 # of modes

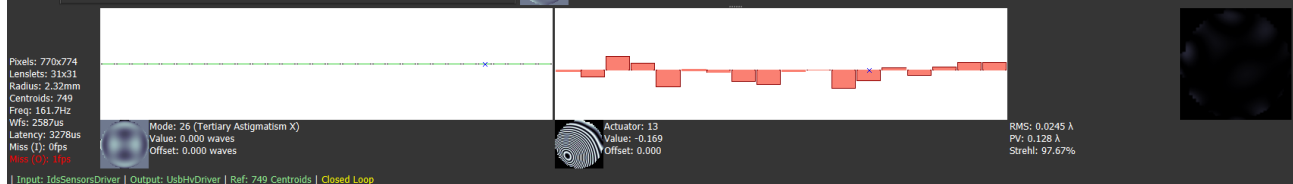


Figure 3 Closed loop settings

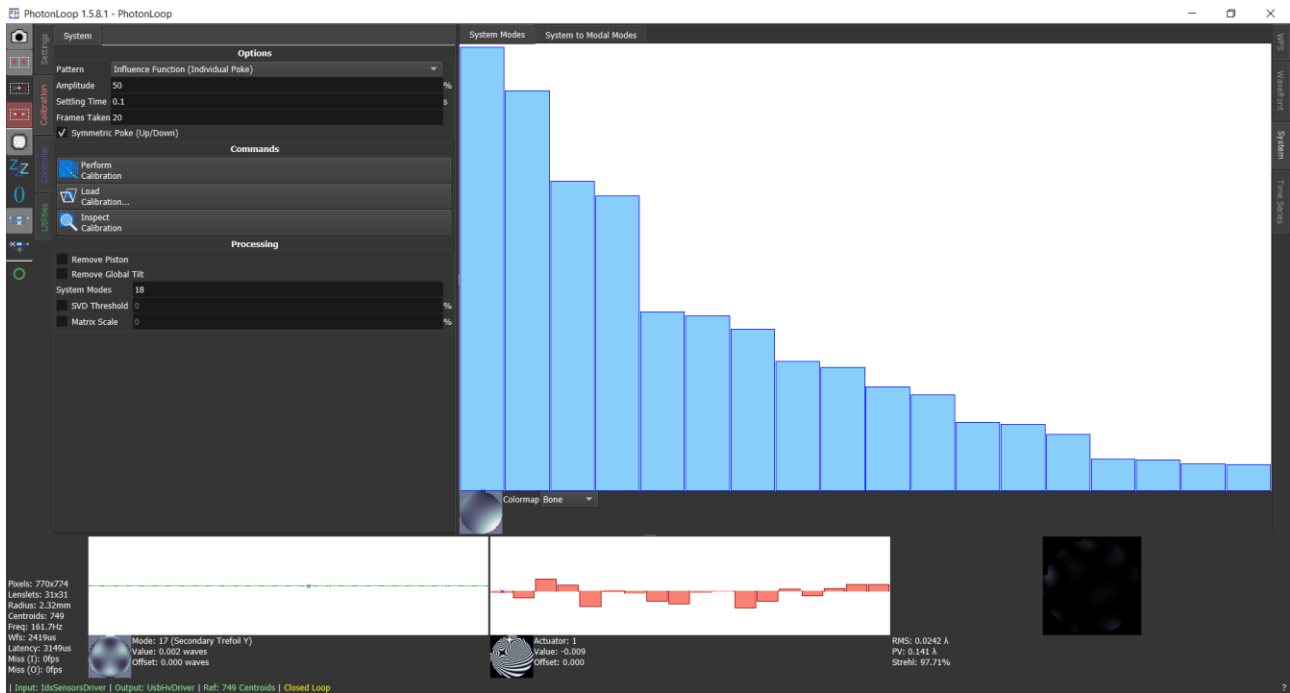
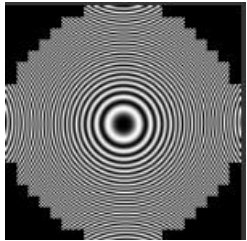
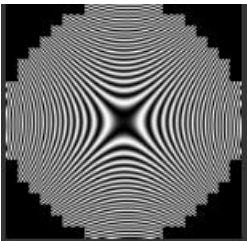
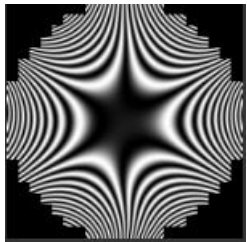
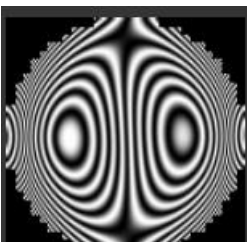
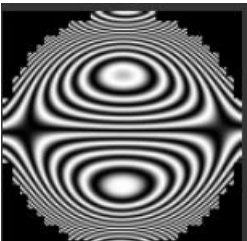
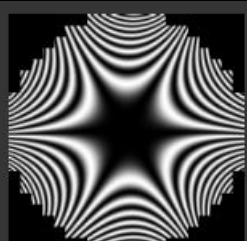
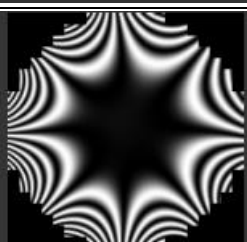


Figure 4 Calibration modes results

Generation of modes in CLOSED LOOP

Actuators max voltage		Above 90% DR	
Mode	RMS waves @633nm	PtV waves @633nm	Wavefront interferogram
Tip +	18.1	71.6	
Tip -	-15.1	59.7	
Tilt +	13.5	53.1	
Tilt -	-14.3	56.5	
Astigmatism y +	7.7	36.3	
Astigmatism y -	-7.5	35.1	

Defocus +	5.7	20.0	
Defocus-	-7.0	26.1	
Astigmatism x +	5.5	27.2	
Astigmatism x -	-6.4	31.4	
Trefoil y +	3.6	20.6	
Trefoil y -	-4.0	22.8	
Coma y +	2.49	15.6	
Coma y -	-2.35	13.6	
Coma x +	2.48	15.7	
Coma x -	-2.23	13.2	
Trefoil x +	3.85	22.2	
Trefoil x -	-4.0	21.6	
Tetrafoil y +	1.36	9.22	
Tetrafoil y -	-1.21	8.1	

2°Astigmatism y +	0.91	5.6	
2°Astigmatism y -	-0.67	3.9	
Primary Spherical +	0.38	1.5	
Primary Spherical -	-0.355	1.5	
2°Astigmatism x +	0.774	5.58	
2°Astigmatism x -	-0.788	5.73	
Tetrafoil x +	1.0	6.88	
Tetrafoil x -	-1.03	6.7	

Technical drawings

