

## Residual dispersions and pupil shifts for BK7/LLF6 ADC for NAOMI WFS

**wht-naomi-62**

The residual dispersions, in arcseconds, at zenith distances of 30, 45 and 60 degrees are tabulated below. The values are given for two ADC settings, the first bringing 500 and 1000 nm to the same position and the second for 500 and 800 nm. The prism pair deviation and displacement have been nulled for the laser wavelength 632.8 nm. The x and y positions of the pupil centre for the given wavelengths are tabulated for each ADC setting and also for the zero dispersion condition. These values are in microns at the pupil plane, the lenslet size is 1100 microns and the pupil is 8.08 mm in diameter.

### Zenith distance 30?

#### Residual dispersions

Wavelength nm	Residual dispersion in arcseconds 500-1000nm	Residual dispersion in arcseconds 500-800nm
500	0.0358	0.0208
550	0.0117	0.0039
600	0.0019	-0.0007
632.8	0	0
700	0.0028	0.0068
800	0.0134	0.0212
900	0.0254	0.0353
1000	0.0358	0.0468

#### Pupil positions

Wavelength Nm	X-position (undispersed) microns	Y-position(dispersed) microns
500	28.44	-26.57
550	14.70	-14.74
600	4.96	-4.94
632.8	0.05	-0.02
700	-7.47	7.52
800	-14.56	14.66
900	-18.68	18.87
1000	-20.95	23.39

**Zenith distance 45?**

**Residual dispersions**

<b>Wavelength nm</b>	<b>Residual dispersion in arcseconds 500-1000nm</b>	<b>Residual dispersion in arcseconds 500-800nm</b>
500	0.0628	0.0373
550	0.0204	0.0072
600	0.0033	-0.0011
632.8	0	0
700	0.0051	0.0118
800	0.0240	0.0372
900	0.0451	0.0620
1000	0.0635	0.0824

**Pupil positions**

<b>Wavelength nm</b>	<b>X-position (undispersed) microns</b>	<b>Y-position(dispersed) microns</b>
500	26.48	-50.68
550	13.64	-26.04
600	4.60	-8.73
632.8	0.05	-0.04
700	-6.94	13.30
800	-13.52	25.92
900	-17.34	33.35
1000	-19.45	37.59

**Zenith distance 60?**

**Residual dispersions**

<b>Wavelength nm</b>	<b>Residual dispersion in arcseconds 500-1000nm</b>	<b>Residual dispersion in arcseconds 500-800nm</b>
500	0.1096	0.0624
550	0.0360	0.0116
600	0.0058	-0.0024
632.8	0	0
700	0.0072	0.0198
800	0.0384	0.0628
900	0.0737	0.1049
1000	0.1046	0.1395

### **Pupil positions**

<b>Wavelength</b>	<b>X-position (undispersed)</b>	<b>Y-position(dispersed)</b>
<b>nm</b>	<b>microns</b>	<b>microns</b>
500	19.46	-86.79
550	10.0	-44.59
600	3.39	-14.95
632.8	0.03	-0.06
700	-5.11	22.77
800	-9.96	44.38
900	-12.78	57.11
1000	-14.33	64.39

### **Pupil displacements for ADC set to null dispersion**

### **Pupil positions**

<b>Wavelength</b>	<b>X-position (undispersed)</b>	<b>Y-position(dispersed)</b>
<b>nm</b>	<b>microns</b>	<b>microns</b>
500	29.35	0
550	15.16	0
600	5.12	0
632.8	0.05	0
700	-7.71	0
800	-15.03	0
900	-19.27	0
1000	-21.62	0