

LIGO-T1000380-v1

A crosshair was mounted on a translation stage with an optical encoder. Three measurements of pixel location were taken at each stage setting. 90mm of the 150 mm aperture were covered, in the x direction only. The response is quite linear with a calculated slope of 0.2651 mm/pixel. Work by Tim McDonald 7-8-2010.

The calibrated instrument is the WYKO 6000, located in 39 Lauritsen. The instrument was in the max zoom position. Data were taken near the null fringe each time.

stage reading (mm)	Pixel location	Pixel location	Pixel location	Pixel location (avg of 3 readings)	Standard deviation
3.273	435.78	435.68	436.08	435.846667	0.2081666
6.219	425.96	425	426.19	425.716667	0.63121576
9.816	411.13	411.43	410.77	411.11	0.33045423
12.868	399.58	399.65	399.72	399.65	0.07
15.88	388.72	388.68	388.43	388.61	0.15716234
18.544	378.49	378.39	378.66	378.513333	0.13650397
20.158	372.43	372.54	372.45	372.473333	0.05859465
22.711	363.03	362.98	362.5	362.836667	0.29263174
24.857	355.11	354.87	354.79	354.923333	0.16653328
26.675	347.83	347.96	347.83	347.873333	0.07505554
28.608	340.57	340.52	340.66	340.583333	0.07094599
30.391	333.95	333.85	333.68	333.826667	0.13650397
32.734	324.57	324.68	325.09	324.78	0.27404379
34.355	318.68	318.88	318.68	318.746667	0.11547005
36.006	312.68	312.46	312.57	312.57	0.11
37.633	306.71	306.76	306.68	306.716667	0.04041452
38.81	301.76	302.2	302.19	302.05	0.25119713
40.034	297.27	297.41	297.33	297.336667	0.07023769
42.099	289.69	289.87	289.61	289.723333	0.13316656
44.379	280.89	281.16	280.93	280.993333	0.14571662
46.875	271.73	271.76	271.83	271.773333	0.05131601
48.456	265.43	265.84	265.73	265.666667	0.21221059
50.469	258.22	258.21	258.23	258.22	0.01
52.272	251.21	250.96	251.51	251.226667	0.27537853
54.562	242.74	242.74	242.79	242.756667	0.02886751
56.583	235.05	235.03	235.43	235.17	0.22538855
58.607	227.66	227	227.36	227.34	0.33045423
60.786	219.21	219.33	219.22	219.253333	0.06658328
62.437	212.83	213.04	212.96	212.943333	0.10598742
63.299	209.53	209.79	209.78	209.7	0.1473092
64.904	203.51	203.67	203.67	203.616667	0.09237604
66.328	198.26	198.48	198.62	198.453333	0.18147543
68.758	189.1	189.21	189.25	189.186667	0.07767453
70.73	182.09	181.79	181.83	181.903333	0.16289056
72.859	173.67	173.84	173.8	173.77	0.08888194
74.729	166.98	166.74	166.77	166.83	0.13076697
76.608	159.38	159.37	159.43	159.393333	0.0321455
78.568	151.92	152.2	151.79	151.97	0.20952327
80.333	145.66	145.14	145.94	145.58	0.40595566
82.031	139.21	138.8	138.83	138.946667	0.22854613
84.687	128.81	128.87	128.92	128.866667	0.05507571
86.71	121.22	121.18	121.35	121.25	0.08888194
88.573	114.42	113.75	114.11	114.093333	0.3353108
90.675	106.37	106.38	106.55	106.433333	0.10115994
92.509	99.36	99.4	99.53	99.43	0.08888194
94.215	92.9	92.95	92.86	92.9033333	0.0450925

Average: 0.15765541