

## 6. Examples of Data Recording and Processing

Note: the data below are for reference purposes only, not the criteria for apparatus performance:

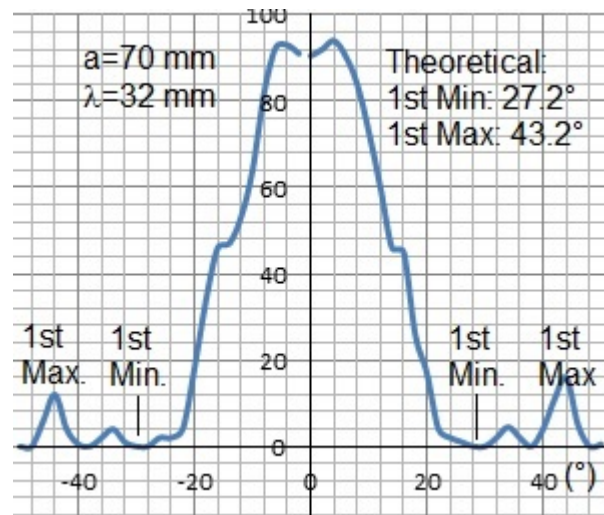
1) Reflection experiment:

Incident angle		30°	35°	40°	45°	50°	55°	60°	65°
Reflection angle	Left	29.6°	35.6°	41.2°	44.1°	50.0°	54.6°	57.6°	62.8°
	Right	32.0°	36.0°	42.0°	43.4°	50.0°	54.0°	58.0°	63.0°

2) Single slit diffraction experiment: ( $a=70$  mm,  $\lambda=32$  mm)

Angle	0°	2°	4°	6°	8°	10°	12°	14°	16°	18°	20°	22°
$I$ (left)	90.5	92	94	90.5	84	73	60	46	45	26	17	4
$I$ (right)		91	93	92.5	82	64	53	47	46	34	18	4

24°	26°	28°	30°	32°	34°	36°	38°	40°	42°	44°	46°	48°	50°
2	1	0	0	2	4.5	2	0	4	11	16	5	0	0.5
2	2	0	0	1	4	2	0	0.5	4	12	6	0	0

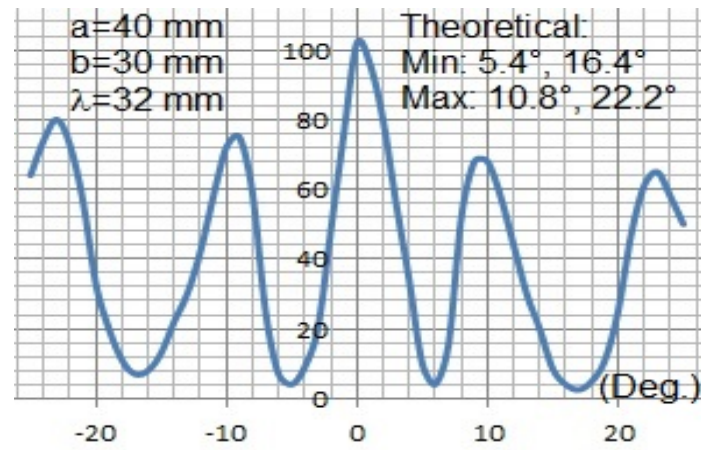


3) Double slit diffraction experiment: ( $a=40$  mm,  $b=30$  mm,  $\lambda=32$  mm)

Angle	0°	1°	2°	3°	4°	5°	6°	7°	8°	9°	10°	11°	12°
$I$ (left)	102	96	80	56	34	10	4	15	52	68	68	58	44
$I$ (right)		76	48	20	9	4	7	25	59	75	72	58	42

13°	14°	15°	16°	17°	18°	19°	20°	21°	22°	23°	24°	25°
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30	20	8.5	4	2.5	5	11	25	47	61	65	58	50
30	22	13	8	7	11	20	33	57	73	80	74	64



4) Michelson interferometer experiment:

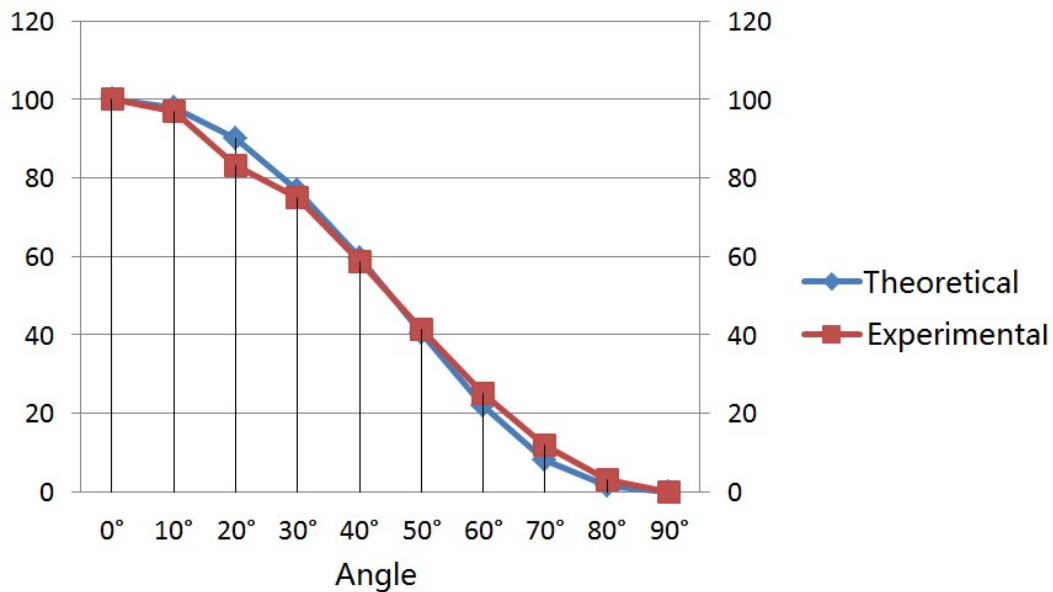
Wavelength  $\lambda=32 \text{ mm}$

Positions of minima intensity (mm): 71.61, 55.28, 38.59, 23, 7.68. ( $N=4$ )

$$\lambda = \frac{2}{N}L = \frac{2}{4}(71.61 - 7.68) = 31.965 \text{ (mm)}$$

5) Polarization experiment:

$\theta$	$0^\circ$	$10^\circ$	$20^\circ$	$30^\circ$	$40^\circ$	$50^\circ$	$60^\circ$	$70^\circ$	$80^\circ$	$90^\circ$
Theoretical	100	96.9	83.3	75	58.6	41.3	25	11.7	3	0
Experimental	100	98	90	77	59.5	40.5	22	8	1.5	0



6) Bragg diffraction experiment:

$\theta$	30°	31°	32°	33°	34°	35°	36°	37°	38°	39°	40°
Face [100]			65	7	9	12.5	196	19.5	21	20	17
Face [110]		0	2	3	4	3	1	0	0	0	0

41°	42°	43°	44°	45°	46°	47°	48°	49°	50°	51°
11.5	6	3	2	2	2	3.5	4	4	2.5	0.7
0	0	0	1	2	3	4.5	6.5	14	32	53.5

52°	53°	54°	55°	56°	57°	58°	59°	60°	61°	62°
0.5	0.5	1	2	3	3	3	3.5	5.5	6	12
69	81	85.5	76.5	73.5	72.5	60	40	19	6	0

63°	64°	65°	66°	67°	68°	69°	70°			
22	3.	40.5	52	75	98	80	24			
0.5	2	45	0.5	1	8	2	0			

