

## Optical Work.

### Prisms for Spectroscopic Work.

The following expressions give the prices of single prisms of  $60^\circ$  angle made to order:—  
 $h$  is the height of the prism in centimetres.  
 $l$  is the length of the refracting face in centimetres.

Refractive Index for D.	Price in Shillings.	The Expressions may be used up to (centimetres)	Glass always in stock to cut Prisms of (centimetres)
1.58 to 1.62	$0.33hl^2 + 17$	$\lambda$ 18 $l$ 18.5	$\lambda$ 10 $l$ 13
1.65	$0.36hl^2 + 17$	10.5 16	8 11
1.74	$0.62hl^2 + 17$	8 10.5	6 8

The above prisms have rectangular refracting surfaces.

Prisms of refractive indices below 1.58 are supplied at the same price as those of 1.58. Higher refractive indices than 1.74 are not recommended except for special purposes. The expressions may be employed up to the sizes given in the third column, and prisms exceeding the dimensions there given will be quoted for on application.

Glass is *always* kept in stock to cut prisms of about the sizes given in the fourth column, and *usually* to cut prisms of the sizes given in the third column.

The prices are for prisms of the highest quality. The angles are made accurate to within  $10''$ . If a greater accuracy be required, for an accuracy of  $+15''$  add 25 per cent., with a minimum charge for the increased accuracy of 10s.; for an accuracy of  $+5''$  add 75 per cent., with a minimum charge for the increased accuracy of 25s.

The following sizes are stocked in refractive indices from 1.58 to 1.65, and are supplied, as will be seen, at a considerable reduction on the above scale of prices. They are in all respects equal in quality to the above prisms, but are only supplied in the sizes and of the refractive indices as stated. The surfaces are rectangular.

Light Flint. ref. ind. for D=1.58 to 1.62 about.			Dense Flint. ref. ind. for D=1.63 to 1.65 about.		
Length of Face.	Height of Prism.	Price.	Length of Face.	Height of Prism.	Price.
in. mm.	in. mm.	£ s. d.	in. mm.	in. mm.	£ s. d.
1½ 32	1 25	1 2 0	1½ 35	1 25	1 10 0
1¾ 42	1½ 32	1 10 0	1¾ 44	1½ 32	1 14 0
2 51	1¾ 38	2 2 6	2¼ 54	1¾ 38	2 8 0
2½ 60	1¾ 44	3 0 0	2½ 64	1¾ 44	3 7 0

It will be noted that the lengths of the surfaces in the above prisms are greater than the heights, and that the ratio of length of surface to height becomes greater with the refractive index. By this means a more satisfactory effective aperture is obtained.

### Right-Angled Prisms.

Length of Square Cathetus Surface.	Price.
10 mm.	£0 16 0
15 "	1 5 0
20 "	1 15 0
25 "	2 5 0
30 "	2 15 0
35 "	3 7 0
40 "	4 0 0
45 "	4 12 0
50 "	5 6 0
55 "	6 0 0
60 "	7 0 0

Larger sizes quoted on application.

The above right-angled prisms are of the very finest quality; of white, clear, and thoroughly annealed crown. The definition is guaranteed, and all the angles are accurate to within  $5'$ . If a greater accuracy of angles be required, for an accuracy of  $+10''$  add 25 per cent., for an accuracy of  $\pm 5''$  add 75 per cent. to the above prices.



## Optical Work

**Diagonal Planes**, of guaranteed quality. Those up to  $2\frac{1}{2}$  inches minor axis can be coated with Palladium instead of Silver, which greatly reduces the liability to tarnish. (These planes are so edged as to reflect a circular beam of light when set at an angle of  $45^\circ$ .)

Diameter of minor axis of surface.	Price.	Diameter of minor axis of surface.	Price.
$1\frac{1}{4}$ inches.	£1 5 0	2 inches.	£2 18 0
$1\frac{1}{2}$ "	1 8 0	$2\frac{1}{2}$ "	4 13 0
$1\frac{3}{4}$ "	1 14 6	3 "	6 10 6
$1\frac{3}{4}$ "	2 10 0	$3\frac{1}{2}$ "	8 10 0

Diagonal planes can be made to fit existing mounts at the same scale of prices, or existing planes up to  $2\frac{1}{2}$  inches minor axis Palladinised.

**Plane Mirrors**, of guaranteed quality, for Siderostats, Heliostats, and general purposes. (The price includes silvering, or in the case of mirrors up to 3 inches diameter coating with Palladium, which greatly reduces the liability to tarnish.) The price for speculum metal mirrors is 50 per cent. higher.

Diameter in inches.	Price.	Diameter in inches.	Price.
1	£0 16 0	8	£20 0 0
$1\frac{1}{2}$	1 3 6	9	24 15 0
2	1 14 0	10	30 10 0
3	3 4 0	11	37 0 0
4	5 6 0	12	44 0 0
5	8 0 0	13	51 0 0
6	11 6 0	14	64 5 0
7	15 10 0	15	78 0 0

Concave mirrors of radius not less than 20 times the diameter, add 25 per cent. to the above prices. Larger sizes quoted for on application.

**Galvanometer Mirrors**, of the highest optical perfection, to the following dimensions:—

Diameter.	Thickness.	Radius of Curvature.
10 mm. (or anything smaller)	0.5 mm.	36 inches, or 1,000 mm.

- (1) Of glass, palladinised on the front. Price, each ... .. £0 6 9  
 (2) Of fused silica, platinised on the front. (These can be soldered without damage). Price, each ... .. 0 8 6

Plane Mirrors, up to 10 mm. dia., at the same prices as above.

Concave Mirrors, up to 10 mm. dia., of other radii than those given, can be supplied at double the above prices.

Larger sizes quoted for if required.

ADAM HILGER, Ltd., 75a Camden Road, London, N.W.

**Cornu Prisms of Quartz.**

**Refracting Angle 60°.**

These prisms are accurately cut with respect to the axis. They are composed of two prisms of right and left rotation quartz respectively, each of 30° angle.

We have recently introduced an important improvement in the construction of these prisms, viz., the setting of the two component prisms into optical contact at the interface. This procedure results in

- (1) Greater optical perfection.
- (2) Removal of double image caused by reflection between the two inside surfaces, without the necessity of any liquid between the two surfaces.
- (3) A gain in light transmitted.
- (4) Greater convenience of handling.

Following our usual procedure with 60° prisms we quote for a length of face greater than the height of prisms. We cannot, however, in the case of quartz prisms always adhere quite rigidly to the sizes stated.

Length of external faces.		Height of prism.		Price.
mm.	in.	mm.	in.	
25	1	19	$3\frac{3}{4}$	£3 12 0
32	$1\frac{1}{4}$	25	1	5 3 0
42	$1\frac{3}{4}$	32	$1\frac{1}{4}$	8 10 0
50	2	38	$1\frac{3}{4}$	12 10 0
57	$2\frac{1}{4}$	44	$1\frac{3}{4}$	17 4 0
65	$2\frac{3}{4}$	50	2	24 0 0

**Plane Parallel Glass.**

*(First quality surfaces only supplied.)*

This is stocked in the following thicknesses:—

1 mm., 2 mm., 3 mm.,  $4\frac{3}{4}$  mm.,  $7\frac{1}{2}$  mm., 10 mm.

1 mm. thick Plane Parallel Glass, accuracy of parallelism about 10 seconds.

Price in shillings =  $2.00 \times$  area in square cms. + 3.5.

up to 25 mm. in the longest dimension.

2 mm. thick Plane Parallel Glass, accuracy of parallelism about 6 seconds.

Price in shillings =  $1.75 \times$  area in square cms. + 3.5.

up to 40 mm. in the longest dimension.

3 mm. thick Plane Parallel Glass, accuracy of parallelism about 3 seconds.

Price in shillings =  $1.75 \times$  area in square cms. + 3.5.

up to 50 mm. in the longest dimension.

$4\frac{3}{4}$  mm. thick Plane Parallel Glass, accuracy of parallelism about 3 seconds.

Price in shillings =  $1.75 \times$  area in square cms. + 3.5.

up to 65 mm. in the longest dimension.

7 mm. thick Plane Parallel Glass, accuracy of parallelism about 3 seconds.

Price in shillings =  $1.75 \times$  area in square cms. + 3.5.

up to 100 mm. in the longest dimension.

10 mm. thick Plane Parallel Glass, accuracy of parallelism about 3 seconds.

Price in shillings =  $1.75 \times$  area in square cms. + 3.5.

up to 150 mm. in the longest dimension.

**ADAM HILGER, Ltd., 75a Camden Road, London, N.W.**

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