Experimental Reading

Pitch (least count of main scale) of spherometer = 1 mm

Least count of vernier (circular) scale of spherometer = 0.01mm

Average distance between any two legs of the spherometer (l) = 4.152 cm

Measurement of curvature of Convex lens:

Using Spherometer radius of curvature (R) can be measured. For this following formula is used.

$$\boldsymbol{R = \frac{l^2}{6h} + \frac{h}{2}}$$

To measure (h) use the following set of readings taken using spherometer:

Serial No.	Spherometer Circular scale reading on lens	Spherometer Circular scale reading on plate	Difference of the two circular scale readings (m)	Number of complete rotations moved (n)	$h = n \times$ (pitch) + $m \times$ (least count of circular scale)
1	35	8		0	
2	38	6		0	
3	39	6		0	

Average value of h =

Measurement of the diameter of the fringes

Least count of micrometer on microscope (Vernier scale) = 0.01 mm

Serial No	No. of Ring (n)	Microscope Reading				Diameter = D_n = |left hand side − right hand side|
		Left hand side		Right hand side		
		Main Scale reading (in cm)	Vernier scale divisions	Main Scale reading (in cm)	Vernier scale divisions	
1	22	4.65	10	3.95	11	
2	20	4.60	40	3.95	35	
3	18	4.60	18	4.00	01	
4	16	4.60	0	4.00	14	
5	14	4.55	25	4.00	39	
6	12	4.50	45	4.05	03	
7	10	4.50	30	4.05	35	
8	8	4.50	09	4.10	02	
9	6	4.45	30	4.10	34	
10	4	4.40	45	4.15	09	
11	2	4.40	01	4.20	15	