

Experimental arrangement:- Date: _____

Light from the monochromatic source S is made parallel by convex lens L_1 . The parallel rays are reflected by a glass plate P which is inclined to the horizontal at 45° and fall on the air film between the plano-convex lens L and the glass plate G . Newton's rings are viewed by a microscope.

The microscope is adjusted such that the intersection of the cross wires coincide with the centre of ring system and one of the cross wire is perpendicular to the direction of travel of microscope. The microscope is then moved to the last ring from the centre.

It is now moved by slow motion screw and the cross wire is set at the edges of the bright rings. ^{every} The reading of microscope is taken _{say after 2 rings} each time. The observations are taken for about ten rings and then the microscope is moved to the other side of the central spot and the readings corresponding to same no. of rings are taken. The diameters of different rings are calculated.

A graph is plotted between d_n^2 and n . The graph is a straight line. The slope of the graph gives $(d_{n+m}^2 - d_n^2)/m$.

The radius of curvature (R) of the lens is measured with the help of a spherometer. Then λ is calculated.

