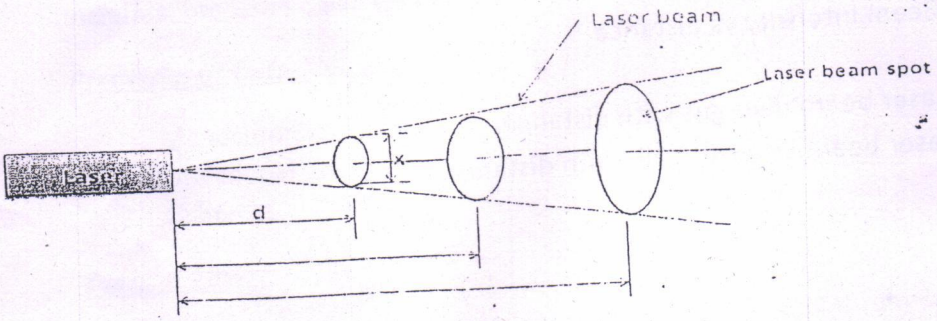
EXPERIMENT NO. 7

Objective: To determine beam divergence and beam intensity of a laser beam.

Apparatus: Laser (He-Ne), inch-tape, graph paper, cellotape.



Procedure:

(A) Beam Divergence

1. Paste a graph paper on a wall using cellotape.
2. Place a laser about 5m away from the graph paper such that the laser beam spot is formed clearly on it. Note its diameter.
3. Take similar readings at 4m, 3m, 2m, and 1m.
4. Plot a graph between spot size and distance, which shows that the laser beam diverges as we move away from the graph paper.

(B) Beam Intensity

1. Find the area of laser beam spots for all the laser positions taken under (A).
2. Divide laser beam power by these spot areas for each laser position. This gives laser beam intensity at different positions of the laser.
3. Plot a graph between beam intensity and distance, which shows fall of beam intensity as the laser is moved away from the graph paper.

Observations

Sr. No.	Laser position (m)	Spot diameter (mm)	Spot area (m^2)	Beam intensity ($mW\ m^{-2}$)
1				
2				
3				
4				
5				

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