

The Physics Experiments of Robert Wichard Pohl (1884–1976)

For decades, Robert Wichard Pohl taught his famous lectures of introductory physics in the old lecture hall of the Physics Institute at Goettingen University. These lectures became the foundation for three volumes entitled „Introduction into Physics“. Now, using Professor Pohl’s original instruments in the same lecture hall in which he taught, this set of videos captures his extraordinary ingenuity and once more brings to life Pohl’s great experimental skills.



Cone of reflected light

Video title: Cone of reflected light
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Abstract: The reflection of light is demonstrated using a polished steel tube. The reflected light has the shape of a cone.
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Key words: Optics, reflection, law of reflection

Goal of the experiment: The law of the reflection of light is demonstrated for the special case of a curved reflector.
Experimental setup: A beam of light, several cm in diameter, is produced with a carbon arc lamp and a condenser. It is reflected off a cylindrical polished steel tube, and is observed on the wall of the lecture hall.
Experiment: After turning on the lamp, the experimenter holds the steel tube into the light beam. Depending on the angle between the tube and the light beam, cones of reflected light are formed. Their intersections with the wall are being observed as curved bands of light. Those change, as the tube is being moved. If the tube is held perpendicularly to the incoming light beam, the angle of the reflected cone is 180 degrees, seen as a straight light band on the wall. It is noted parenthetically that the structure observed in the bands is caused by slight unevenness of the cylindrical surface.

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