



ACROSS

- 1 At the angle of incidence known as _____'s angle, light for which the electric field of the light waves lies in the same plane as the incident ray and the surface normal cannot be reflected with polarization.
- 2 The _____ disc is the diffraction pattern resulting from a uniformly illuminated circular aperture.
- 9 A diffraction _____ is an optical component with a surface covered by a regular pattern of parallel lines, typically with a distance between the lines comparable to the wavelength of light.
- 11 The _____ interferometer is a common configuration for optical interferometry in which an interference pattern is produced by splitting a beam of light into two paths, bouncing the beams back and recombining them.
- 13 _____ refers to electromagnetic radiation of a single wavelength.
- 14 Physical or _____ optics, is the branch of optics which studies interference, diffraction, polarization, and other phenomena for which the ray approximation of geometric optics is not valid.
- 15 In the _____-slit experiment, light is shone at a solid thin plate that has two slits cut into it. A photographic plate is set up to record what comes through those slits.

DOWN

- 1 _____ is the decomposition of a ray of light into an ordinary ray and an extraordinary ray when it passes through certain types of material, such as calcite crystals or boron nitride, depending on the polarization of the light.
- 3 _____ is the superposition of two or more waves that results in a new wave pattern.
- 4 _____ is the technique of superposing two or more waves, to detect differences between them.
- 5 The _____-Fresnel principle recognizes that each point of an advancing wave front is in fact the center of a fresh disturbance and the source of a new train of waves.
- 6 _____ is the property of wave-like states that enables them to exhibit interference. It is a measure of how perfectly the waves can cancel due to destructive interference.
- 7 _____ is the property of electromagnetic waves that describes the direction of the transverse electric field.
- 8 A _____ is a device that converts an unpolarized or mixed-polarization beam of electromagnetic waves into a beam with a single polarization state.
- 10 A _____ is the locus of points in a wave having the same phase.
- 12 The phenomenon of _____'s rings is an interference pattern caused by the reflection of light between two surfaces - a spherical surface and an adjacent flat surface.