Professional Certificate in Vehicle Lighting Systems

Optics And Photonics

Absorption: Absorption is the process by which light is absorbed by a material, resulting in a loss of intensity. In optics and photonics, absorption is an important concept, as it can affect the performance of optical systems. For example, in laser systems, absorption can occur in the gain medium, reducing the efficiency of the laser. Related terms: Attenuation, transmission.

Adaptive Optics: Adaptive optics is a technique used to improve the performance of optical systems by compensating for distortions caused by the atmosphere or other factors. In vehicle lighting systems, adaptive optics can be used to improve the beam quality of headlights, allowing for more efficient and effective illumination. For example, adaptive optics can be used to correct for the distortions caused by heat generated by the headlights.

Airy Disk: The Airy disk is a diffraction pattern that occurs when light passes through a circular aperture. In optics and photonics, the Airy disk is an important concept, as it can be used to determine the resolution of an optical system. For example, in microscopy, the Airy disk can be used to determine the resolution of the microscope.

Ampere: The ampere is a unit of electric current, defined as the flow of one coulomb per second. In optics and photonics, the ampere is an important concept, as it is used to measure the current flowing through optical devices, such as LEDs.

Anamorphosis: Anamorphosis is a technique used to create distorted images that can only be viewed correctly from a specific angle. In vehicle lighting systems, anamorphosis can be used to create unique and interesting lighting effects. For example, anamorphosis can be used to create a stretched image of a logo or brand name.

Angular Frequency: Angular frequency is a measure of the frequency of a wave, defined as the rate of change of the phase of the wave. In optics and photonics, angular frequency is an important concept, as it is used to describe the behavior of light waves. For example, in interference experiments, angular frequency is used to describe the behavior of light waves.

Apodization: Apodization is a technique used to reduce the effects of diffraction in optical systems. In vehicle lighting systems, apodization can be used to improve the beam quality of headlights, allowing for more efficient and effective illumination. For example, apodization can be used to reduce the intensity of the beam at the edges.

Aspheric Lens: An aspheric lens is a type of lens that has a non-spherical surface. In optics and photonics,

aspheric lenses are used to correct for aberrations and improve the performance of optical systems. For example, in camera systems, aspheric lenses can be used to correct for distortion.

Attenuation: Attenuation is the reduction in intensity of a light wave as it passes through a material or medium. In optics and photonics, attenuation is an important concept, as it can affect the performance of optical systems. For example, in fiber optic systems, attenuation can occur due to absorption or scattering.

Avalanche Photodiode: An avalanche photodiode is a type of photodetector that uses avalanche multiplication to amplify the signal. In optics and photonics, avalanche photodiodes are used in a variety of applications, including lidar systems and optical communication systems.

Ballast: A ballast is a device used to regulate the current flowing through a light source, such as a fluorescent lamp. In vehicle lighting systems, ballasts are used to control the intensity of the light emitted by the headlights.

Beam Divergence: Beam divergence is a measure of the spreading of a light beam as it propagates through space. In optics and photonics, beam divergence is an important concept, as it can affect the performance of optical systems. For example, in laser systems, beam divergence can be used to determine the spot size of the beam.

Beam Homogenizer: A beam homogenizer is a device used to uniformize the intensity of a light beam. In vehicle lighting systems, beam homogenizers can be used to improve the beam quality of headlights, allowing for more efficient and effective illumination. For example, beam homogenizers can be used to reduce the intensity variations in the beam.

Birefringence: Birefringence is the property of a material to have two different refractive indices for light waves of different polarizations. In optics and photonics, birefringence is an important concept, as it can be used to create polarization effects. For example, in liquid crystals, birefringence can be used to create polarization effects.

Blackbody Radiation: Blackbody radiation is the thermal radiation emitted by an object at a given temperature. In optics and photonics, blackbody radiation is an important concept, as it can be used to describe the behavior of light sources. For example, in incandescent lamps, blackbody radiation can be used to describe the spectrum of the light emitted.

Bloom: Bloom is a type of optical effect that occurs when light is scattered by small particles or defects in a material. In vehicle lighting systems, bloom can be used to create unique and interesting lighting effects. For example, bloom can be used to create a haze effect around the headlights.

Bragg Grating: A Bragg grating is a type of optical grating that uses periodic variations in the refractive index to reflect light. In optics and photonics, Bragg gratings are used in a variety of applications, including optical communication systems and sensors.

Brewster Angle: The Brewster angle is the angle of incidence at which light is completely polarized by a reflective surface. In optics and photonics, the Brewster angle is an important concept, as it can be used to create polarization effects. For example, in mirrors, the Brewster angle can be used to create polarization effects.

Candela: The candela is a unit of luminous intensity, defined as the luminous intensity of a light source that emits a total luminous flux of one lumen per steradian. In vehicle lighting systems, candelas are used to measure the intensity of the headlights.

Cathodoluminescence: Cathodoluminescence is the emission of light by a material when it is excited by an electron beam. In optics and photonics, cathodoluminescence is an important concept, as it can be used to create display devices. For example, in televisions, cathodoluminescence can be used to create display devices.

Caustic: A caustic is a bright, curved line that appears when light is reflected or refracted by a curved surface. In vehicle lighting systems, caustics can be used to create unique and interesting lighting effects. For example, caustics can be used to create a glow effect around the headlights.

Charge-Coupled Device: A charge-coupled device is a type of image sensor that uses a series of charge-coupled devices to capture an image. In optics and photonics, charge-coupled devices are used in a variety of applications, including cameras and telescopes.

Chromatic Aberration: Chromatic aberration is a type of optical aberration that occurs when light of different wavelengths is focused at different points. In vehicle lighting systems, chromatic aberration can be used to create unique and interesting lighting effects. For example, chromatic aberration can be used to create a rainbow effect around the headlights.

Circular Polarization: Circular polarization is a type of polarization that occurs when the electric field vector of a light wave rotates in a circular motion. In optics and photonics, circular polarization is an important concept, as it can be used to create polarization effects. For example, in mirrors, circular polarization can be used to create polarization effects.

Coherence: Coherence is the ability of a light wave to maintain its phase over a given distance or time. In optics and photonics, coherence is an important concept, as it can be used to describe the behavior of light waves. For example, in interference experiments, coherence is used to describe the behavior of light waves.

Coherent Scattering: Coherent scattering is a type of scattering that occurs when light is scattered by a material in a coherent manner. In optics and photonics, coherent scattering is an important concept, as it can be used to create interference effects. For example, in holography, coherent scattering can be used to create interference effects.

Collimation: Collimation is the process of making a light beam parallel, so that it can be focused at a single

point. In vehicle lighting systems, collimation can be used to improve the beam quality of headlights, allowing for more efficient and effective illumination. For example, collimation can be used to reduce the divergence of the beam.

Color Temperature: Color temperature is a measure of the color of a light source, defined as the temperature of a blackbody radiator that emits light of the same color. In vehicle lighting systems, color temperature is an important concept, as it can be used to create unique and interesting lighting effects. For example, color temperature can be used to create a warm or cool effect.

Complementary Metal-Oxide-Semiconductor: Complementary metal-oxide-semiconductor is a type of image sensor that uses a complementary metal-oxide-semiconductor to capture an image. In optics and photonics, complementary metal-oxide-semiconductors are used in a variety of applications, including cameras and telescopes.

Conjugate: Conjugate is a term used to describe the relationship between two points in an optical system. In optics and photonics, conjugate is an important concept, as it can be used to describe the behavior of light waves. For example, in imaging systems, conjugate is used to describe the relationship between the object and image points.

Contrast: Contrast is a measure of the difference in intensity between two points in an image. In vehicle lighting systems, contrast is an important concept, as it can be used to create unique and interesting lighting effects. For example, contrast can be used to create a high or low contrast effect.

Convolution: Convolution is a mathematical operation that is used to combine two functions. In optics and photonics, convolution is an important concept, as it can be used to describe the behavior of light waves. For example, in image processing, convolution is used to combine two images.

Critical Angle: The critical angle is the angle of incidence at which light is completely reflected by a surface. In optics and photonics, the critical angle is an important concept, as it can be used to create total internal reflection effects. For example, in fiber optic systems, the critical angle can be used to create total internal reflection effects.

Cryogenics: Cryogenics is the study of the behavior of materials at very low temperatures. In optics and photonics, cryogenics is an important concept, as it can be used to create superconducting materials. For example, in superconducting devices, cryogenics can be used to create superconducting materials.

Curvature of Field: Curvature of field is a type of optical aberration that occurs when the image plane is curved. In vehicle lighting systems, curvature of field can be used to create unique and interesting lighting effects. For example, curvature of field can be used to create a barrel or pincushion effect.

Cycle: Cycle is a term used to describe the repetition of a waveform or signal. In optics and photonics, cycle is an important concept, as it can be used to describe the behavior of light waves. For example, in

interference experiments, cycle is used to describe the behavior of light waves.

Decibel: The decibel is a unit of measurement that is used to express the ratio of two values. In optics and photonics, decibels are used to measure the intensity of light waves. For example, in optical communication systems, decibels can be used to measure the intensity of the signal.

Degree of Polarization: Degree of polarization is a measure of the polarization of a light wave, defined as the ratio of the polarized intensity to the total intensity. In optics and photonics, degree of polarization is an important concept, as it can be used to create polarization effects. For example, in mirrors, degree of polarization can be used to create polarization effects.

Diffraction: Diffraction is the bending of light around an obstacle or through a narrow aperture. In optics and photonics, diffraction is an important concept, as it can be used to create interference effects. For example, in holography, diffraction can be used to create interference effects.

Diffraction Grating: A diffraction grating is a type of optical grating that uses diffraction to separate light into its component colors. In optics and photonics, diffraction gratings are used in a variety of applications, including spectroscopy and optical communication systems.

Dispersion: Dispersion is the spreading of light as it passes through a material or medium. In optics and photonics, dispersion is an important concept, as it can be used to create prism effects. For example, in prism systems, dispersion can be used to create prism effects.

Distortion: Distortion is a type of optical aberration that occurs when the shape of an image is distorted. In vehicle lighting systems, distortion can be used to create unique and interesting lighting effects. For example, distortion can be used to create a barrel or pincushion effect.

Divergence: Divergence is a measure of the spreading of a light beam as it propagates through space. In optics and photonics, divergence is an important concept, as it can be used to describe the behavior of light waves. For example, in laser systems, divergence can be used to determine the spot size of the beam.

Double Refraction: Double refraction is a type of optical phenomenon that occurs when light passes through a material that has two different refractive indices. In optics and photonics, double refraction is an important concept, as it can be used to create polarization effects. For example, in crystals, double refraction can be used to create polarization effects.

Echelle Grating: An echelle grating is a type of diffraction grating that uses a series of steps to separate light into its component colors. In optics and photonics, echelle gratings are used in a variety of applications, including spectroscopy and optical communication systems.

Electric Field: The electric field is a vector field that describes the force exerted on a charged particle by an electric field. In optics and photonics, the electric field is an important concept, as it can be used to describe

the behavior of light waves. For example, in electromagnetic theory, the electric field is used to describe the behavior of light waves.

Electroluminescence: Electroluminescence is the emission of light by a material when it is excited by an electric current. In optics and photonics, electroluminescence is an important concept, as it can be used to create display devices. For example, in LEDs, electroluminescence can be used to create display devices.

Electromagnetic Radiation: Electromagnetic radiation is a type of radiation that includes light, radio waves, and other forms of electromagnetic energy. In optics and photonics, electromagnetic radiation is an important concept, as it can be used to describe the behavior of light waves. For example, in electromagnetic theory, electromagnetic radiation is used to describe the behavior of light waves.

Electromagnetic Spectrum: The electromagnetic spectrum is the range of frequencies of electromagnetic radiation, from low-frequency radio waves to high-frequency gamma rays. In optics and photonics, the electromagnetic spectrum is an important concept, as it can be used to describe the behavior of light waves. For example, in optical communication systems, the electromagnetic spectrum can be used to describe the behavior of light waves.

Elliptical Polarization: Elliptical polarization is a type of polarization that occurs when the electric field vector of a light wave rotates in an elliptical motion. In optics and photonics, elliptical polarization is an important concept, as it can be used to create polarization effects. For example, in mirrors, elliptical polarization can be used to create polarization effects.

Emission: Emission is the process by which a material releases energy in the form of light or other forms of electromagnetic radiation. In optics and photonics, emission is an important concept, as it can be used to create light sources. For example, in lasers, emission can be used to create light sources.

Energy: Energy is the ability to do work, and is typically measured in units of joules. In optics and photonics, energy is an important concept, as it can be used to describe the behavior of light waves. For example, in optical communication systems, energy can be used to describe the behavior of light waves.

Etalon: An etalon is a type of optical filter that uses a series of reflective surfaces to separate light into its component colors. In optics and photonics, etalons are used in a variety of applications, including spectroscopy and optical communication systems.

Evanescent Wave: An evanescent wave is a type of wave that decays exponentially as it propagates through a material or medium. In optics and photonics, evanescent waves are an important concept, as they can be used to create tunneling effects. For example, in optical fibers, evanescent waves can be used to create tunneling effects.

Far Field: The far field is the region of an optical system where the light waves have propagated a sufficient distance to be considered plane waves. In optics and photonics, the far field is an important concept, as it

can be used to describe the behavior of light waves. For example, in laser systems, the far field can be used to determine the spot size of the beam.

Fermat's Principle: Fermat's principle is a fundamental principle in optics that states that light always follows the path that takes the least amount of time. In optics and photonics, Fermat's principle is an important concept, as it can be used to describe the behavior of light waves. For example, in optical communication systems, Fermat's principle can be used to describe the behavior of light waves.

Fiber Optics: Fiber optics is the study of the transmission of light through optical fibers. In optics and photonics, fiber optics is an important concept, as it can be used to create optical communication systems. For example, in telecommunication systems, fiber optics can be used to create optical communication systems.

Field: A field is a mathematical concept that describes a distribution of values in space. In optics and photonics, fields are an important concept, as they can be used to describe the behavior of light waves. For example, in electromagnetic theory, fields are used to describe the behavior of light waves.

Fluorescence: Fluorescence is the emission of light by a material when it is excited by an external energy source. In optics and photonics, fluorescence is an important concept, as it can be used to create display devices. For example, in LEDs, fluorescence can be used to create display devices.

Focal Length: Focal length is a measure of the distance between the focal point and the optical center of a lens or mirror. In optics and photonics, focal length is an important concept, as it can be used to describe the behavior of light waves. For example, in imaging systems, focal length can be used to determine the magnification of the image.

Fourier Transform: The Fourier transform is a mathematical operation that is used to decompose a function into its component frequencies. In optics and photonics, the Fourier transform is an important concept, as it can be used to describe the behavior of light waves. For example, in image processing, the Fourier transform can be used to combine two images.

Fraunhofer Diffraction: Fraunhofer diffraction is a type of diffraction that occurs when light passes through a narrow aperture or around an obstacle. In optics and photonics, Fraunhofer diffraction is an important concept, as it can be used to create interference effects. For example, in holography, Fraunhofer diffraction can be used to create interference effects.

Frequency: Frequency is a measure of the number of oscillations or cycles of a wave per unit time. In optics and photonics, frequency is an important concept, as it can be used to describe the behavior of light waves. For example, in optical communication systems, frequency can be used to describe the behavior of light waves.

Fresnel Equations: The Fresnel equations are a set of equations that describe the behavior of light as it

passes through a surface or interface. In optics and photonics, the Fresnel equations are an important concept, as they can be used to describe the behavior of light waves. For example, in optical communication systems, the Fresnel equations can be used to describe the behavior of light waves.

Gain: Gain is a measure of the amplification of a signal or wave. In optics and photonics, gain is an important concept, as it can be used to describe the behavior of light waves. For example, in laser systems, gain can be used to determine the intensity of the beam.

Gaussian Beam: A Gaussian beam is a type of beam that has a Gaussian distribution of intensity. In optics and photonics, Gaussian beams are an important concept, as they can be used to describe the behavior of light waves. For example, in laser systems, Gaussian beams can be used to determine the spot size of the beam.

Geometrical Optics: Geometrical optics is the study of the behavior of light as it passes through optical systems, using the principles of geometry and trigonometry. In optics and photonics, geometrical optics is an important concept, as it can be used to describe the behavior of light waves. For example, in imaging systems, geometrical optics can be used to determine the magnification of the image.

Grating: A grating is a type of optical component that uses a series of parallel lines or grooves to separate light into its component colors. In optics and photonics, gratings are an important concept, as they can be used to create spectroscopy and optical communication systems.

Huygens' Principle: Huygens' principle is a fundamental principle in optics that states that every point on a wavefront can be considered a source of secondary wavelets. In optics and photonics, Huygens' principle is an important concept, as it can be used to describe the behavior of light waves. For example, in optical communication systems, Huygens' principle can be used to describe the behavior of light waves.

Image: An image is a representation of an object or scene, formed by the convergence of light waves. In optics and photonics, images are an important concept, as they can be used to describe the behavior of light waves. For example, in imaging systems, images can be used to determine the magnification of the image.

Incoherence: Incoherence is the lack of coherence between two or more light waves. In optics and photonics, incoherence is an important concept, as it can be used to describe the behavior of light waves. For example, in interference experiments, incoherence can be used to describe the behavior of light waves.

Index of Refraction: The index of refraction is a measure of the bending of light as it passes through a material or medium. In optics and photonics, the index of refraction is an important concept, as it can be used to describe the behavior of light waves. For example, in optical communication systems, the index of refraction can be used to describe the behavior of light waves.

Intensity: Intensity is a measure of the power per unit area of a light wave. In optics and photonics, intensity

is an important concept, as it can be used to describe the behavior of light waves. For example, in laser systems, intensity can be used to determine the spot size of the beam.

Interference: Interference is the combination of two or more light waves to form a new wave pattern. In optics and photonics, interference is an important concept, as it can be used to create holography and optical communication systems.

Interferometer: An interferometer is a type of optical instrument that uses interference to measure the properties of light waves. In optics and photonics, interferometers are an important concept, as they can be used to measure the wavelength and phase of light waves.

Inverse Square Law: The inverse square law is a principle that states that the intensity of a light wave decreases with the square of the distance from the source. In optics and photonics, the inverse square law is an important concept, as it can be used to describe the behavior of light waves. For example, in laser systems, the inverse square law can be used to determine the intensity of the beam.

Irradiance: Irradiance is a measure of the power per unit area of a light wave. In optics and photonics, irradiance is an important concept, as it can be used to describe the behavior of light waves. For example, in laser systems, irradiance can be used to determine the spot size of the beam.

Kirchhoff's Law: Kirchhoff's law is a principle that states that the ratio of the emissivity of a material to its absorptivity is equal to the ratio of the emissivity of a blackbody to its absorptivity. In optics and photonics, Kirchhoff's law is an important concept, as it can be used to describe the behavior of light waves. For example, in thermal imaging systems, Kirchhoff's law can be used to describe the behavior of light waves.

Lambert's Law: Lambert's law is a principle that states that the intensity of a light wave decreases with the cosine of the angle of incidence. In optics and photonics, Lambert's law is an important concept, as it can be used to describe the behavior of light waves. For example, in laser systems, Lambert's law can be used to determine the intensity of the beam.

Laser: A laser is a type of light source that uses amplification to produce a coherent beam of light. In optics and photonics, lasers are an important concept, as they can be used to create high intensity light beams. For example, in material processing systems, lasers can be used to create high intensity light beams.

Lens: A lens is a type of optical component that uses refraction to focus or diverge light waves. In optics and photonics, lenses are an important concept, as they can be used to create imaging systems and optical communication systems.

Linear Polarization: Linear polarization is a type of polarization that occurs when the electric field vector of a light wave oscillates in a linear motion. In optics and photonics, linear polarization is an important concept, as it can be used to create polarization effects. For example, in mirrors, linear polarization can be used to create polarization effects.

Luminescence: Luminescence is the emission of light by a material when it is excited by an external energy source. In optics and photonics, luminescence is an important concept, as it can be used to create display devices. For example, in LEDs, luminescence can be used to create display devices.

Luminous Flux: Luminous flux is a measure of the total amount of light emitted by a light source. In optics and photonics, luminous flux is an important concept, as it can be used to describe the behavior of light waves. For example, in laser systems, luminous flux can be used to determine the intensity of the beam.

Magnification: Magnification is a measure of the size of an image compared to the size of the object. In optics and photonics, magnification is an important concept, as it can be used to describe the behavior of light waves. For example, in imaging systems, magnification can be used to determine the size of the image.

Malus' Law: Malus' law is a principle that states that the intensity of a light wave decreases with the square of the cosine of the angle of polarization. In optics and photonics, Malus' law is an important concept, as it can be used to describe the behavior of light waves. For example, in polarization experiments, Malus' law can be used to describe the behavior of light waves.

Maxwell's Equations: Maxwell's equations are a set of four equations that describe the behavior of light waves in terms of the electric and magnetic fields. In optics and photonics, Maxwell's equations are an important concept, as they can be used to describe the behavior of light waves. For example, in electromagnetic theory, Maxwell's equations can be used to describe the behavior of light waves.

Microscopy: Microscopy is the study of the behavior of light as it passes through small objects or samples. In optics and photonics, microscopy is an important concept, as it can be used to create high resolution images of small objects. For example, in biological systems, microscopy can be used to create high resolution images of small objects.

Mirror: A mirror is a type of optical component that uses reflection to divert or redirect light waves. In optics and photonics, mirrors are an important concept, as they can be used to create imaging systems and optical communication systems.

Mode: A mode is a type of wave pattern that can exist in an optical system. In optics and photonics, modes are an important concept, as they can be used to describe the behavior of light waves. For example, in laser systems, modes can be used to determine the intensity of the beam.

Modulation: Modulation is the process of varying the amplitude, frequency, or phase of a light wave to encode information. In optics and photonics, modulation is an important concept, as it can be used to create optical communication systems. For example, in telecommunication systems, modulation can be used to create optical communication systems.

Monochromatic: Monochromatic is a term used to describe light that has a single wavelength or color. In optics and photonics, monochromatic is an important concept, as it can be used to describe the behavior of

light waves. For example, in laser systems, monochromatic can be used to determine the wavelength of the beam.

Nanophotonics: Nanophotonics is the study of the behavior of light at the nanoscale. In optics and photonics, nanophotonics is an important concept, as it can be used to create high resolution images of small objects. For example, in biological systems, nanophotonics can be used to create high resolution images of small objects.

Near Field: The near field is the region of an optical system where the light waves have not propagated a sufficient distance to be considered plane waves. In optics and photonics, the near field is an important concept, as it can be used to describe the behavior of light waves. For example, in optical communication systems, the near field can be used to describe the behavior of light waves.

Nonlinear Optics: Nonlinear optics is the study of the behavior of light as it passes through nonlinear media. In optics and photonics, nonlinear optics is an important concept, as it can be used to create high intensity light beams. For example, in material processing systems, nonlinear optics can be used to create high intensity light beams.

Numerical Aperture: Numerical aperture is a measure of the ability of an optical system to gather and focus light. In optics and photonics, numerical aperture is an important concept, as it can be used to describe the behavior of light waves. For example, in imaging systems, numerical aperture can be used to determine the resolution of the image.

Objective: An objective is a type of lens or optical component that is used to collect and focus light. In optics and photonics, objectives are an important concept, as they can be used to create imaging systems and optical communication systems.

Optical Fiber: An optical fiber is a type of optical component that uses total internal reflection to transmit light. In optics and photonics, optical fibers are an important concept, as they can be used to create optical communication systems. For example, in telecommunication systems, optical fibers can be used to create optical communication systems.

Optical Path Length: Optical path length is a measure of the distance that light travels through an optical system. In optics and photonics, optical path length is an important concept, as it can be used to describe the behavior of light waves. For example, in interference experiments, optical path length can be used to describe the behavior of light waves.

Optical Pumping: Optical pumping is the process of using light to excite a material and create a population inversion. In optics and photonics, optical pumping is an important concept, as it can be used to create laser systems. For example, in laser systems, optical pumping can be used to create a population inversion.

Optics: Optics is the study of the behavior of light and its interactions with matter. In optics and photonics,

optics is an important concept, as it can be used to describe the behavior of light waves. For example, in imaging systems, optics can be used to describe the behavior of light waves.

Oscillation: Oscillation is the periodic variation of a quantity, such as the amplitude or phase of a light wave. In optics and photonics, oscillation is an important concept, as it can be used to describe the behavior of light waves. For example, in laser systems, oscillation can be used to determine the frequency of the beam.

Path Difference: Path difference is a measure of the difference in distance that light travels through two different paths. In optics and photonics, path difference is an important concept, as it can be used to describe the behavior of light waves. For example, in interference experiments, path difference can be used to describe the behavior of light waves.

Period: Period is a measure of the time it takes for a wave to complete one cycle. In optics and photonics, period is an important concept, as it can be used to describe the behavior of light waves. For example, in laser systems, period can be used to determine the frequency of the beam.

Phase: Phase is a measure of the position of a wave in its cycle.