



energybank GLOSSARY of lighting terms

A	Accent Lighting	directional to emphasize a particular object or to draw attention to a part of the field of view
	Adaptation	the process by which the retina of the eye becomes accustomed to more or less light than it was exposed to during an immediately preceding period. It results in a change in the sensitivity of the eye to light.
B	Baffle	a single opaque or translucent element to shield a source from direct view at certain angles, or to absorb unwanted light.
	Ballast	a device used with an electric discharge lamp to obtain the necessary circuit conditions (voltage, current and wave form) for starting and operating. All fluorescent and HID light sources require a ballast for proper operation. Dimming ballasts are special ballasts which when used together with a dimmer will vary the light output of a lamp.
	Ballast Factor (BF)	the measured ability of a particular ballast to produce light from the lamp(s) it powers; ballast factor is derived by dividing the lumen output of a particular lamp/ballast combination by the lumen of the same lamp(s) on a reference ballast.
	Beam Angle	the angle between the two directions for which the intensity (candlepower) is 50% of the maximum intensity as measured in a plane through the nominal beam centerline (center beam candlepower).
	Beam Spread	(in any plane) the angle between two directions in the plane in which the candlepower is equal to a stated percent (usually 10%) of the maximum candlepower in the beam.
	Brightness	see luminance.
C	Candela (cd)	the unit of measure indicating the luminous intensity (candlepower) of a light source in a specific direction; any given light source will have many different intensities, depending upon the direction considered.
	Candlepower Distribution	a curve that represents the variation in luminous intensity (expressed in candelas) in a plane through the light center of a lamp or luminaire; each lamp or lamp/luminaire combination has a unique set of candlepower distributions that indicate how light will be spread.
	Candlepower Distribution Curve	a curve, generally polar, representing the variation of luminous intensity of a lamp or luminaire in a plane through the light center.
	Center Beam Candlepower (CBCP)	the intensity of light produced at the center of a reflector lamp, expressed in candelas.
	Chromaticity	the aspect of color that includes consideration of its dominant wavelength and purity.
	Coefficient of Utilization (CU)	the ratio of the luminous flux (lumens) from a luminaire received on the work-plane to the lumens emitted by the luminaire's lamps alone.
	Color Rendering Index (CRI)	the measure of a light source's ability to render the color of objects.
	Correlated Color Temperature (CCT)	a specification of the color appearance of a lamp relating its color to that of a reference source heated to a particular temperature, measured in degrees Kelvin (K).
	Current	a measure of the flow of electricity, express in amperes (A).
Cut-Off Angle	(of a luminaire) the angle from the vertical at which a reflector, louver or other shielding device cuts off direct visibility of a light source. It is the complementary angle of the shielding angle.	
D	Diffuse Lighting	light that is not predominantly incident from any particular direction.
	Diffuser	a device to redirect or scatter the light from a source by the process of diffuse transmission.
	Direct Glare	glare resulting from high luminance or insufficiently shielded light sources in the field of view, or from reflecting areas of high luminance. It is usually associated with bright areas such as luminaires, ceilings and windows that are outside the visual task or region being viewed.
	Direct Lighting	by luminaires distributing 90 to 100 percent of the emitted light in the general direction of the surface to be illuminated. The term usually refers to light emitted in a downward direction.
	Directional Lighting	illumination on the work plane or on an object predominantly from a single direction.
	Disability Glare	glare resulting in reduced visual performance and visibility. It is often accompanied by discomfort.
Discomfort Glare	glare producing discomfort. It does not necessarily interfere with visual performance or visibility.	
E	Efficacy	efficiency of a light source expressed in lumens per watt (LPW or lm/W)

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E	Enhancing Reflections	reflection which enhance appearance described in such terms as sparkling, glittering, etc.
	ESCO	Energy Saving Service Company
F	Fenestration	any opening or arrangement of openings or windows (normally filled with media for light control) for the admission of daylight or for the transmission of electric from one room to another room.
	Fixture	see luminaire.
	Fluorescent Lamp	a low pressure mercury electric discharge lamp, tubular in shape in which a fluorescent coating (phosphor) transforms ultraviolet energy into visible light.
	Footcandle (fc)	a unit of illuminance equal to 1 lumen per square foot.
	Frequency	the number of times per second that an alternating current system reverses from positive to negative and back to positive, expressed in cycles per second or hertz, Hz.
G	General Lighting	designed to provide a substantially uniform illuminance throughout an area, exclusive of any provision for special local requirements.
	Glare	excessive brightness that may be caused by either direct or indirect viewing of a light source; any brightness or brightness relationship that annoys, distracts or reduces visibility.
H	Harmonic	an electrical frequency that is an integer multiple of the fundamental frequency; for example, if 60 Hz is the fundamental frequency, then 120 Hz is the second harmonic and 180 Hz is the third harmonic; some electronic devices, such as ballasts or power supplies, can cause harmonic distortion, directly affecting power quality.
	Hertz (Hz)	a unit of frequency equal to one cycle per second; see frequency.
	HID	see High Intensity Discharge lamps.
	High Intensity Discharge Lamps	a general group of lamps consisting of mercury, metal halide and high pressure sodium lamps. Also referred to as HID lamps.
I	Illuminance	light arriving at a surface, expressed in lumens per unit area; 1 lumen per square meter equals 1 lux.
	Incandescent Filament Lamp	a lamp in which light is produced by a filament heated to incandescence by an electric current.
	Indirect Lighting	by luminaires distributing 90 to 100 percent of the emitted light upward.
L	Lamp	a generic term for a man-made source of light; the 3 broad categories of electric lamps are incandescent, fluorescent, and high intensity discharge (HID).
	Lamp Life	an average rating in hours, indicating when 50% of a large group of lamps have failed, when operated at nominal lamp voltage and current; manufacturers use 3 hours per start for fluorescent lamps and 10 hours per start for HID lamps when performing lamp life testing procedures; every lamp type has a unique mortality curve that depicts its average rated life.
	Lamp Lumen Depreciation Factor (LLD)	the multiplier to be used in illumination calculations to relate the initial rated output of light sources to the anticipated minimum rated output based on the relamping program to be used.
	LED (Light Emitting Diode)	a semiconductor device that emits optical radiation in the visible, UV or I region(s) when forward-biased.
	LED Driver	power source and control circuitry designed to operate an LED package, and LED module or an LED lamp.
	LED Package	an assembly of one or more LEDs, possibly with a lens or reflector and thermal, mechanical and electrical interfaces.
	Lens	a glass or plastic element used i luminaires to change the direction and control the distribution of light rays.
	Level of Illumination	see illuminance.
	Light	radiant energy that is capable of producing a visual sensation.
	Light Loss Factor (LLF)	a factor used in calculating illuminance after a given period of time and under given conditions. It takes into account temperature and voltage variations, dirt accumulation on luminaire and room surfaces, lamp depreciation, maintenance procedures and atmosphere conditions. Formerly called maintenance factor.

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L	Light Source	see lamp.
	Louver	a series of baffles used to shield a source from view at certain angles or to absorb unwanted light. The baffles are usually arranged in a geometric pattern.
	Lumen (lm)	a unit of luminous flux; the overall light output of a luminous source is measured in lumens.
	Lumen Depreciation	the decrease in lumen output of a light source over time; every lamp type has a unique lumen depreciation curve (sometimes called lumen maintenance curve) depicting the pattern of decreasing light output.
	Lumen Maintenance	see lumen depreciation.
	Luminaire	a light fixture, the complete unit, including lamp, reflector, ballast, socket, wiring, diffuser, and housing.
	Luminaire Efficiency	the ratio of luminous flux (lumens) emitted by a luminaire to that emitted by the lamp or lamps used therein.
	Luminance (L)	light emitted, transmitted or reflected in a particular direction; the photometric quantity most closely associated with brightness perception, measured in units of luminous intensity (candelas) per unit area (square feet or square meters).
	Luminance Contrast	the relationship between the luminance of an object and its immediate background.
	Luminance Ration	the ratio between the luminance of any two areas in the visual field.
	Luminous Flux	the time rate of flow of light.
	Lux (lx)	a unit of illuminance equal to 1 lumen per square meter.
M	Matte Surface	a non-glossy dull surface as opposed to a shiny (specular) surface. Light reflected from a matte surface is diffuse.
	Modeling	the effect of using highly directional light to create form through shadows and highlights.
N	Nanometer (nm)	a unit of length equal to 10 to the -9th meters; commonly used as a unit of wavelength.
P	Power	the rate at which energy is taken from an electrical system or dissipated by a load, expressed watts (W); power that is generated by a utility is typically expressed in volt-amperes (V-A).
	Power Factor	a measure of the effectiveness with which an electrical device converts volt-amperes to watts; devices with power factors greater than 0.90 are "high power factor" devices.
Q	Quality of Lighting	pertains to the distribution of luminance in a visual environment. The term is used in a positive sense and implies that all luminance contribute favorably to visual performance, visual comfort, ease of seeing, safety and aesthetics for the specific visual tasks involved.
	Quantity of Light	the product of the luminous flux by the time it is maintained. It is the time integral of luminous flux.
R	Reference Ballast	a ballast specially constructed to have certain prescribed characteristics for use in testing electric discharge lamps and other ballasts.
	Reflectance (rho)	the percentage of light reflected back from a surface, the difference having been absorbed or transmitted by the surface.
	Reflected Glare	glare resulting from specular reflections of high luminance on polished or glossy surfaces in the field of view.
	Reflection	the process by which flux leaves a surface or medium from the incident side.
	Reflector	a device used to redirect the light by the process of reflection.
	Refraction	the process by which the direction of a ray of light changes as it passes obliquely from one medium to another.
	Refractor	a device used to redirect the luminous flux from a source, primarily by the process of refraction.
	Resistance (R)	a measure of resistance to flow of current, expressed in ohms.

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S	Shielding	a general term to include all devices used to block, diffuse or redirect light rays, including baffles, louvers, shades, diffusers and lenses.
	Shielding Angle	the complementary angle of the cut-off angle of a luminaire.
	Spectral Power Distribution (SPD)	a curve illustrating the distribution of power produced by the lamp, at each wavelength across the spectrum.
	Specular Surface	a shiny, highly polished surface which reflects light at an angle equal to that of the incident light.
	Supplementary Lighting	used to provide an additional quantity and quality of illumination that cannot be readily obtained by a general system and that supplements the general level usually for specific task requirements.
T	Transmission	the process by which incident flux leaves a surface or medium on a side other than the incident side, the characteristics of many materials such as glass, plastics and textiles.
	Transmittance	the ratio of the flux transmitted by a medium to the incident flux.
V	Veiling Reflections	reflections which partially or totally obscure the details to be seen by reducing the contrast.
	Visual Comfort Probability (VCP)	a discomfort glare calculation that predicts the percent of observers positioned in the least favorable part of the room who would be expected to judge a condition to be comfortable. VCP rates the luminaire in its environment, taking into account such factors as illuminance level, room dimensions and reflectances, luminaire type, size and light distribution, number and location of luminaires, and observer location and line of sight. The high the VCP the more comfortable the environment.
	Visual Field	the location of objects or points in a space where the head and eyes are kept fixed.
	Visual Surround	all portions of the visual field except the visual task.
	Visual Task	those details and objects which must be seen for the performance of a given activity, including the immediate background of the details or objects.
	Voltage (E)	a measure of electrical potential, expressed in volts (V).
W	Watt (W)	a unit of electrical power equal to 1 joule per second.
	Work Plane	the plane at which work usually is done, and on which th illuminance is specified and measured. Unless otherwise indicated, this is assumed to be a horizontal plane 0.76 meters (30 inches) above the floor.

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