

Lightpoint Glossary

ballast: a device used with an electric-discharge lamp to obtain the necessary circuit conditions (voltage, current and waveform) for starting and operating; all fluorescent and HID light sources require a ballast for proper operation

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 output of the same lamp(s) on a reference ballast

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 has a unique set of candlepower distributions that indicate how light will be spread

center beam candle power, CBCP: the intensity of light produced at the center of a reflector lamp, expressed in candelas.

color rendering index, CRI: the measure of a light source's ability to render the color of objects "correctly", as compared with a reference source with comparable color temperature.

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); CCT generally measures the "warmth" or "coolness" of a light source appearance.

current, I: a measure of the flow of electricity, expressed in amperes (A).

efficacy: efficiency of a light source expressed in lumens per watt (LPW or lm/W).

energy: a measure of work done by an electrical system over a given period of time, often expressed in kilowatt-hours (kWh).

footcandle, fc: a unit of illuminance equal to 1 lumen per square foot.

frequency: the number of times per second that an alternating current reverses from positive to negative and back to positive, expressed in cycles per second or hertz (Hz).

glare: excessive brightness that may be caused by either direct or indirect viewing of a light source.

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.

illuminance: light arriving at a surface, expressed in lumens per unit area; 1 lumen per square foot equals 1 footcandle, while 1 lumen per square meter equals 1 lux

lamp: manufactured light source; the 3 broad categories are 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.

light: radiant energy that is capable of producing a visual sensation

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.

luminaire: a light fixture; the complete lighting unit, including lamp, reflector, ballast, socket, wiring, diffuser, and housing.

luminance, L: light 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).

lux, lx: a unit of illuminance equal to 1 lumen per square meter.

power: the rate at which energy is taken from an electrical system or dissipated by a load, expressed in watts; power that is generated by a utility is typically expressed in volt-amperes.

power factor: a measure of the effectiveness with which an electrical device converts volt-amperes to watts; devices with power factors >0.90 are "high power factor" devices.

reflectance, p: the percentage of light reflected back from a surface, the difference having been absorbed or transmitted by the surface.

resistance, R: a measure of resistance to flow of current, expressed in ohms.

spectral power distribution, SPD: a curve illustrating the distribution of power produced by the lamp, at each wavelength across the spectrum.

voltage, E: a measure of electrical potential, expressed in volts (V).