

### Amperes (Amps)

A measure of electrical current. Amps = Watts/Voltage

### Argon

Inert gas used in incandescent and fluorescent lamp types. In incandescent light sources, argon retards evaporation of the filament.

### Average Rated 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. The life of an LED is defined as the operating time in hours for the lamp to reach L70 which designates 70% lumen maintenance (or 30% reduction in initial light output). Every lamp type has a unique mortality curve that depicts its average rated life.

### Center Beam Candlepower (CBCP)

The luminous intensity at the center of the beam of a reflector lamp.

### Color Corrected

Refers to a lamp with a special phosphor or coating to give it a color rendering profile similar to natural daylight.

### Color Rendering Index (CRI)

A lamp's ability to render an object's true colors based on a scale of 100.

### Color Temperature

A numerical measurement of the color appearance of a light source measured in degrees Kelvin (K). It also refers to the way color groups are perceived (psychological impact of lighting) with "warm" colors at the red/orange/yellow end of the spectrum and "cool" colors at the blue end.

### Current

A measure of the rate of flow of electricity, expressed in amperes (A).

### Diode

A two-terminal semiconductor device having a p-n (positive-negative) junction which mainly lets energy travel in one direction.

### Discharge Lamp

A light source that produces light by passing a current between electrodes through a vapor or gas. Includes fluorescent and high intensity discharge lamps.

### Driver

An LED driver is a self-contained power supply that has outputs which match the electrical characteristics of the LEDs. Drivers should be current-regulated and may also offer dimming by means of pulse width modulation (PWM) circuits.

### Energy Policy Act (EPACT)

Energy legislation passed by Congress in 1992 and updated periodically, mandating labeling and minimum energy efficiency requirements for many commonly used incandescent and fluorescent lamps.

### Filament

Wire used in incandescent lamps, usually made of tungsten and often coiled, that emits light when heated by an electrical current.

### Footcandle (fc)

A unit of illuminance or light falling onto a surface measured as the light level on a surface one foot from a standard candle.

### Halogen Cycle

A regenerative cycle of tungsten and halogen atoms, which prevents blackening of the lamp envelope during the life of the lamp.

#### Heat Sink

A heat sink (or heatsink) is an environment or object that absorbs and dissipates heat from another object.

#### High Output Fluorescent (HO)

Fluorescent lamps designed to be used with an 800 milliampere ballast. Able to operate at low temperatures (down to 0oF) and still produce high light levels.

#### High Power LED

An LED that can be powered at hundreds of milliamps (mA) in contrast to "traditional" indicator LEDs (SMD, 8mm, 5mm, etc.) which can only be powered at a few milliamps. A High Power LED produces high lumen output and can be set in an array to form a powerful LED lamp.

#### 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.

#### Initial Lumens

The measured luminous output of a new light source.

#### Instant Start

A type of fluorescent lamp-ballast circuit designed to start fluorescent lamps as soon as the power is applied. Originally, instant-start circuits were developed to eliminate separate mechanical starter devices. Slimline fluorescents lamps operate only on instant circuits.

#### Integrated Circuit (IC)

IC-based CFLs operate by controlling the voltage and current by adjusting the output frequency which provides stable operation of the CFL. Controlling the current produces less stress on the cathode and the electronic components, which results in long life, smoother dimming, and less noise.

#### Lens

A lens is an optical device that refracts light, converging or diverging the beam.

#### Lumen (lm)

A measure of luminous flux or quantity of light emitted by a source.

#### Lumen Depreciation

The gradual decline in light output from a light source over time due to filament deterioration and bulb darkening.

#### Lumen Maintenance

A measurement of how a lamp maintains its light output over time.

#### Lumen Per Watt (LPW)

A measure of the efficacy (efficiency) of a light source. The number is achieved by dividing lumens produced by watts consumed.

#### Luminous Efficacy

The light output (lumens) of a light source divided by the total power input (watts) to that source. It is expressed in lumens per watt.

#### Lux (lx)

A unit of illuminance or light falling onto a surface. One lux is equal to one lumen per square meter.

#### Maximum Overall Length (M.O.L.)

The end-to-end measurement of a lamp, expressed in inches or millimeters.

## Neodymium

A rare earth element used to produce full spectrum incandescent lamps; also known as daylight or natural light. They use a colored glass shell to filter out the yellow light produced by standard incandescent lamps.

## Nominal Length

A measurement for Fluorescent lamp length based on the length of the lamp plus an allowance for the luminaire's lamp holders.

## Phosphor

An inorganic chemical compound processed into a powder and deposited on the inner glass surface of fluorescent tubes, CFL's, LED's and some mercury and metal-halide lamp bulbs.

## Programmed Start

A fluorescent lamp-ballast circuit that uses a custom integrated circuit (IC), which monitors lamp and ballast conditions to ensure optimal system lighting performance. PS ballasts heat the lamp cathodes to 700oC prior to lamp ignition. This puts the least amount of stress on the lamp electrodes, resulting in maximum lamp life regardless of the number of lamp starts. Programmed-start ballasts are typically wired in series.

## Pulse Start

A fluorescent lamp-ballast circuit that is designed with an ignitor to ignite the arc tube. Due to this, bulbs have no need for the starter electrode. Pulse start lamps are typically more efficient than standard counterparts.

## Rapid Start

A fluorescent lamp-ballast circuit which utilized continuous cathode heating, while the system is energized, to start and maintain lamp light output at efficient levels. Rapid start ballasts may be either electromagnetic, electronic or of hybrid designs. Full-range fluorescent lamp dimming is only possible with rapid start systems.

## Rated Lamp Life

The length of time of a statistically large sample between first use and the point when 50% of lamps died.

## Surface Mounted Device (SMD)

Specific style of miniature LEDs. The LED chip is mounted directly to the surface of a circuit board. Often referred to as the "honeycomb" LEDs.

## Voltage

A measurement of the electromotive force in an electrical circuit or device expressed in volts.

## Watt

A unit of electrical power. Lamps are rated in watts to indicate the rate at which they consume energy.