

Lighting Glossary

ANTI-PANIC (OPEN) AREA LIGHTING: The part of Emergency Escape Lighting provided to avoid panic and provide illumination allowing people to reach a place where an escape route can be identified.

BALLAST: A device used to operate fluorescent and HID lamps. The ballast provides the necessary starting voltage, while limiting and regulating the lamp current during operation.

BALLAST LUMEN FACTOR: The ballast factor (BLF) for a specific lamp-ballast combination represents the percentage of the rated lamp lumens that will be produced by the combination in emergency mode.

CANDELA: Unit of luminous intensity, describing the intensity of a light source in a specific direction.

CENTRAL BATTERY SYSTEM: A system in which the batteries for a number of emergency luminaires are housed in one location. Usually for all the emergency luminaires on one lighting sub-circuit, but sometimes for all emergency luminaires in a complete building.

COLOUR RENDERING INDEX (CRI): A scale of the effect of a light source on the colour appearance of an object compared to its colour appearance under a reference light source. Expressed on a scale of 1 to 100, where 100 indicates no colour shift. A low CRI rating suggests that the colours of objects will appear unnatural under that particular light source.

COLOUR TEMPERATURE: The colour temperature is a specification of the colour appearance of a light source, relating the colour to a reference source heated to a particular temperature, measured by the thermal unit Kelvin. The measurement can also be described as the “warmth” or “coolness” of a light source. Generally, sources below 3200K are considered “warm;” while those above 4000K are considered “cool” sources.

COMBINED EMERGENCY LUMINAIRE: A luminaire containing two or more lamps, at least one of which is energised from the emergency supply and the remainder from the normal supply (If the emergency lamp is only illuminated in a mains failure condition this luminaire is regarded for fire authority approval as non-maintained).

COMPACT FLUORESCENT: A small fluorescent lamp that is often used as an alternative to incandescent lighting. The lamp life is about 10 times longer than incandescent lamps and is 3-4 times more efficacious. Also called PL, Twin-Tube, CFL, or BIAX lamps.

DAYLIGHT HARVESTING: A dimming system controlled by a photocell that reduces the output of the lamps when daylight is present. As daylight levels increase, lamp intensity decreases. An energysaving technique used in areas with significant daylight contribution.

DIMMING (DIMMABLE CONTROL GEAR): [See controls section.](#)

DESIGN VOLTAGE: The voltage declared by the manufacturer to which all the ballast characteristics are related.

DISABILITY GLARE: Glare produced directly or by reflection, that obscures or impairs vision of an object, but does not necessarily cause any discomfort.

DISCOMFORT GLARE: Glare which causes visual discomfort.

DOWNWARD LIGHT OUTPUT RATIO (DLOR): The ratio of luminaire light output below the horizontal, compared with total lamp light output.

ELECTRONIC STARTER: A starting device used for fluorescent tubes, [see switch start.](#)

EMERGENCY LIGHTING: The lighting provided for use when the supply to the normal mains lighting installation fails.

ESCAPE ROUTE LIGHTING: Lighting provided to ensure that the means of escape can be effectively identified and safely used when a location is occupied.

EMERGENCY EXIT: The way out of a building, which is intended to be used at any time whilst the premises are occupied.

'F' MARK: Mark indicating that a luminaire is suitable for mounting on to normally combustible surfaces.

FINAL EXIT: The terminal point of an escape route, beyond which point persons are no longer in danger from fire or any other hazard requiring evacuation of the building.

FLUORESCENT LAMP: A light source consisting of a tube filled with argon, along with krypton or other inert gas. When electrical current is applied, the resulting arc emits ultraviolet radiation that excites the phosphors inside the lamp wall, causing them to radiate visible light.

GLARE: The effect of brightness or differences in brightness within the visual field sufficiently high to cause annoyance, discomfort or loss of visual performance.

HID: Abbreviation for high intensity discharge. Generic term describing mercury vapor, metal halide, high pressure sodium, and (informally) low pressure sodium light sources and luminaires.

HIGH FREQUENCY (HF): Electronic control gear consists of a single ballast unit that performs the functions of all of the major components in a standard switch start circuit. Through the use of solid state electronics the HF ballast creates a discharge frequency of 25-40kHz. This is far higher than standard switch start circuits (100Hz) and results in a vast improvement in the quality of the light produced. Lamp flicker is eliminated and as HF operation is more efficient than normal operation, significant savings can be made in energy costs. Most HF control gear also incorporates a warm start facility to extend the useful life of the lamp.

ILLUMINANCE: A photometric term that quantifies light incident on a surface or plane. Illuminance is commonly called light level. It is expressed as lumens per square foot (footcandles), or lumens per square meter (lux).

INGRESS PROTECTION (IP) NUMBER: Classification of the degree of protection a luminaire provides against the entry of solid foreign bodies and moisture (See page 473 for classification)

ISOLUX DIAGRAM: Diagram showing contours of equal illuminance

K FACTOR: The ratio of the light output from the lamp in its worst condition, normally at end of discharge and with any cable volt drop, to the output at nominal voltage.
DISCOMFORT GLARE: Glare which causes visual discomfort.

LAMP MAINTENANCE FACTOR (LLMF): The proportion of light output of a lamp after a stated period, compared with initial lumen output.

LAMP SURVIVAL FACTOR (LSF): The proportion of functioning lamps in an installation after a stated period.

LED: Abbreviation for light emitting diode. An illumination technology used for exit signs. Consumes low wattage and has a rated life of greater than 80 years.

LIGHT LOSS FACTOR (LLF): See Maintenance Factor

LIGHT OUTPUT RATIO (LOR): The ratio of the total light output of a luminaire, compared with total lamp light output.

LOW-VOLTAGE LAMP: A lamp (typically compact halogen) that provides both intensity and good colour rendition. Lamp operates at 12V and requires the use of a transformer. Popular lamps are MR11, MR16, and PAR36.

LUMEN: A unit of light flow, or luminous flux. The lumen rating of a lamp is a measure of the total light output of the lamp.

LUMINAIRE: A complete lighting unit consisting of a lamp or lamps, along with the parts designed to distribute the light, hold the lamps, and connect the lamps to a power source. Also called a fixture.

LUMINAIRE EFFICIENCY: The ratio of total lumen output of a luminaire and the lumen output of the lamps, expressed as a percentage. For example, if two luminaires use the same lamps, more light will be emitted from the fixture with the higher efficiency.

LUMINANCE: A photometric term that quantifies brightness of a light source or of an illuminated surface that reflects light. It is expressed as footlamberts (English units) or candelas per square meter (Metric units).

LUX (LX): The metric unit of measure for illuminance of a surface. One lux is equal to one lumen per square meter. One lux equals 0.093 footcandles.

MAINTAINED ILLUMINANCE: Refers to light levels of a space at other than initial or rated conditions. This terms considers light loss factors such as lamp lumen depreciation, luminaire dirt depreciation, and room surface dirt depreciation.

PHOTOCELL: A light sensing device used to control luminaires and dimmers in response to detected light levels.

PHOTOMETRIC REPORT: A photometric report is a set of printed data describing the light distribution, efficiency, and zonal lumen output of a luminaire. This report is generated from laboratory testing.

POWER FACTOR: The ratio of AC volts x amps through a device to AC wattage of the device. A device such as a ballast that measures 120 volts, 1 amp, and 60 watts has a power factor of 50% (volts x amps = 120 VA, therefore 60 watts/120 VA = 0.5). Some utilities charge customers for low power factor systems.

RETROFIT: Refers to upgrading a fixture, room, or building by installing new parts or equipment.

SWITCH START: The lamp current is limited by a wire wound magnetic choke or ballast. The choke, which is basically a coil of wire, makes the circuit inductive, stepping the out of phase with the voltage. To reduce this phase difference and improve the efficiency of the circuit it is necessary to include a power factor correction capacitor.

TUNGSTEN HALOGEN LAMP: A gas-filled tungsten filament incandescent lamp with a lamp envelope made of quartz to withstand the high temperature. This lamp contains some halogens (namely iodine, chlorine, bromine, and fluorine), which slow the evaporation of the tungsten. Also, commonly called a quartz lamp.

VANDAL-RESISTANT: Fixtures with rugged housings, break-resistant type shielding, and tamper-proof screws.

VOLT: The standard unit of measurement for electrical potential. It defines the “force” or “pressure” of electricity.

VOLTAGE: The difference in electrical potential between two points of an electrical circuit.

WATT (W): The unit for measuring electrical power. It defines the rate of energy consumption by an electrical device when it is in operation. The energy cost of operating an electrical device is calculated as its wattage times the hours of use. In single phase circuits, it is related to volts and amps by the formula: Volts x Amps x PF = Watts. (Note: For AC circuits, PF must be included.)

WORKING PLANE: The level at which work is done and at which illuminance is specified and measured. For office applications, this is typically a horizontal plane 0.75 meters above the floor (desk height).