

Lighting Glossary

Average illuminance (Eav)

Illuminance averaged over a specified surface. Unit lux (lx) = lm/m² (lumens per square metre).

Ballast

Device used with discharge lamps for stabilizing the current in the discharge.

Beam axis

The direction in the centre of the solid angle which is bounded by directions having luminous intensities of 90% of the maximum intensity of a luminaire.

Beam spread

The angle, in the plane through the beam axis, over which the luminous intensity drops to a stated percentage of its peak intensity.

Candela (cd)

The standard unit of light intensity, being one lumen per steradian.

Ceramic metal halide lamp

A metal halide discharge lamp where the discharge tube (light source) is made from a ceramic rather than the normal quartz. This enables a smaller and more accurate discharge tube with an improved lumen package (see also Metal halide lamp).

Reference examples: CDM-T, CDO-TT, CDO-ET, CMH and HCI-TT.

Circuit watts

The total power consumption of a lamp circuit. It is equal to the sum of nominal lamp watts and the control gear watt losses.

Cold-start lamp

Discharge lamp designed to start without preheating of the electrodes.

Colour rendering and colour rendering index (CRI)

The ability of a light source to render colours naturally, without distorting the hues seen under a black full spectrum radiator (like daylight or incandescent lamps). The colour rendering index ranges from 0 to 100 and is also referred to as Ra.

Colour temperature (K)

The colour appearance of a given light source can be plotted by reference to its colour temperature, and is generally quoted in degrees Kelvin.

Column

A pole for mounting a luminaire commonly made from steel or concrete.

Compact fluorescent lamp (CFL)

A compact low pressure discharge lamp (see Fluorescent lamp) with a layer of fluorescent material, excited by ultraviolet radiation from the discharge, to produce mainly white light.

Cosmopolis

A refined CDO lamp (see Ceramic metal halide lamp), manufactured by Philips. Provides a white light (Ra>60) with a lower energy consumption than standard CDO lamps.

Dimming

A way of decreasing the luminous flux from lamps by means of an electrical or electronic system.

Discharge lamp

Lamp in which the light is produced, directly or indirectly, by an electric discharge through a gas, a metal vapour, or a mixture of several gases and vapours.

Downlight (downlighter)

Small luminaire concentrating the light usually recessed in the ceiling.

ECG

Electronic control gear

Edison screw (ES)

This is a type of connection between a lamp and a lamp holder where the lamp is screwed into the holder. Also available in a larger size, GES (Giant Edison Screw) and a smaller size, SES (Small Edison Screw).

Floodlight

Projector designed for floodlighting, usually capable of being pointed in any direction and of weatherproof construction.

Fluorescent lamp

Discharge lamp of the low-pressure mercury type in which most of the light is emitted by a layer of fluorescent material excited by the ultraviolet radiation from the discharge. This term is most commonly applied to low pressure tubular fluorescent lamps.

Glare

Condition of vision in which there is discomfort or a reduction in the ability to see significant objects, or both, due to an unsuitable distribution or range of luminance.

GLS

General lighting source. This is the standard tungsten filament lamp or incandescent lamp.

Halogen lamp

A tungsten filament lamp which includes halogens in the gas filling and a high temperature quartz envelope. This produces a more efficient incandescent lamp with longer life and a higher lumen output than standard tungsten filament lamps.

High-pressure mercury (vapour) lamp

High-intensity mercury vapour discharge lamp with or without a phosphor coating, producing a blue green tinted white light.

Reference examples: MBF, MBFU, HPL and HQL.

High-pressure sodium (vapour) lamp (HPS)

High-intensity sodium discharge lamp with a yellowish colour appearance and a very high efficiency.

Reference examples: SON, SON-T, SON-E and SON-L.

Illuminance (E)

The luminous flux density at the surface being lit. The unit is the lux being one lumen per square metre (lm/m^2). The orientation of the surface may be defined, e.g. horizontal, vertical, hence horizontal illuminance, vertical illuminance.

Incandescent lamp

Lamp in which light is produced by means of an element heated to incandescence by the passage of an electric current. See GLS.

Lamp

Lamp is the generic term for a light source. Light bulbs, tubes, capsules and spots are all types of lamp.

Lantern

See Luminaire.

LED

Light emitting diode (LED) is a low wattage solid state device that produces light of a saturated colour (mainly red, green and blue) and can also produce white light. Individual LEDs are relatively small and have a low lumen output. For this reason, they are not currently used for mainstream outdoor lighting and are more likely to be used for decorative or theatrical effects.

Light

The visible part of the electromagnetic radiation spectrum with a wavelength of between 380 to 760nm (nanometre). Ultraviolet radiation has a wavelength of less than 380nm, whilst infrared light is greater than 760nm and may be considered as the cooler and warmer end of the light spectrum.

Light output ratio (LOR)

The ratio of the total light emitted by a luminaire to the total light output of the lamp(s) it contains. The ratio can be expressed as two (or more) quantities, as per the Downward LOR (DLOR) plus the Upward LOR (ULOR) of a luminaire, the summation of which will equal the LOR. The light output ratio can be expressed as a percentage or a number, and is always less than 100 per cent or 1.

Lighting level

See Illuminance and Average Illuminance.

Low-pressure sodium (vapour) lamp

High-intensity sodium discharge lamp with monochromatic yellow light.

Reference examples: SOX and SOXE.

Lumen depreciation

Reduction in light output of a light source during its lifetime.

Luminaire

A lighting fitting which distributes light from a lamp or lamps. A luminaire will contain all the necessary components for fixing and protecting the lamp or lamps and may include control gear.

Luminance (L)

The light intensity per square metre of apparent area of the light source, luminaire or illuminated surface and sometimes called brightness. Where surfaces are lit, the luminance is dependent upon both the lighting levels and the reflection characteristics of the surface itself.

Unit L = candelas per square metre (cd/m²).

Luminous efficacy

The ratio of the luminous flux (lumens) of a lamp to the power (watts) consumed. Note that both the lamp luminous efficacy and the system (lamp plus ballast) luminous efficacy can be specified. The system luminous efficacy is always lower than the lamp luminous efficacy.

Unit " lumens per watt (lm/w).

Luminous flux

The total light emitted by a light source. The light emitted is measured in lumens. Luminous flux can also be the total light falling on a surface.

Luminous intensity

See Candela.

Lux

The standard unit of illuminance. One lux is one lumen per square metre (lm/m²).

Metal halide lamp

High pressure discharge lamp in which the white light is produced by the radiation from a mixture of a metallic vapour (mercury) and products of the dissociation of halides (e.g. halides of thallium, indium or sodium).

Reference examples: MBI, MBI-T, MBI-L, HPI-T and HQI-T.

Metal vapour lamp

Discharge lamp such as the 'mercury (vapour) lamp' and the 'sodium (vapour) lamp' in which the light is mainly produced in a metallic vapour.

Nominal lamp watts

The nominal power consumption of a lamp in watts (w). It does not include any control gear watt losses (see Circuit watts).

Photo cell

A daylight activated switching device for controlling the switching on and off of a lighting circuit or circuits.

Power factor and power factor correction (PFC)

Power factor is the ratio of the circuit power in watts to the product of the root mean square values of voltage and current. In simple lamp circuits, this ratio is less than 0.5. Such low power factors increase the KVA (kilo volts amps) demand from the supply, reducing the load that can be safely handled by the cables and distribution equipment. For this reason, electrical supply companies require that the power factor for lighting circuits should not be less than 0.9 lagging. To achieve this, lighting circuits have to include power factor correction capacitors.

Projector

Luminaire using reflection and/or refraction to increase the luminous intensity within a very limited solid angle.

SON

See High-pressure sodium lamp.

SOX

See Low-pressure sodium lamp.

Starter or Ignitor

A device for starting discharge lamps. A starter is normally associated with fluorescent lamps and an ignitor with high pressure discharge lamps, such as metal halide or high-pressure sodium.