

light source have an expected colour relative to their colour under a reference light source.

Note: R_a is derived from the colour rendering indices for a specified set of eight test colour samples. R_a has a maximum of 100, which generally occurs when the spectral distributions of the light source and the reference light source are substantially identical.

For specification, for design purposes colour rendering requirements should be specified using the general colour rendering index and should take one of the following values of R_a : 20, 40, 60, 80, 90.

General diffused lighting: lighting by means of luminaires having a distribution of luminous intensity such that the fraction of the emitted luminous flux directly reaching the working plane, assumed to be unbounded, is 40–60 per cent.

General lighting: substantially uniform lighting of an area without provision for special local requirements.

Glare: condition of vision in which there is discomfort or a reduction in the ability to see details or objects, caused by an unsuitable distribution or range of luminance, or to extreme contrasts. See also: **Disability glare** and **Discomfort glare**.

Global solar radiation: combined direct solar radiation and diffuse sky radiation.

Hemispherical illuminance (at a point) (E_{hs}): total luminous flux falling on the curved surface of a very small hemisphere located at the specified point divided by the curved surface area of the hemisphere. The base of the hemisphere is taken to be horizontal unless stated otherwise. Unit: lux.

Illuminance (at a point of a surface) (E): quotient of the luminous flux $d\Phi_v$, incident on an element of the surface containing the point, by the area dA of that element.

Equivalent definition: integral, taken over the hemisphere visible from the given point, of the expression $L \cos \theta d\Omega$, where L is the luminance at the given point in the various directions of the incident elementary beams of solid angle $d\Omega$, and θ is the angle between any of these beams and the normal to the surface at the given point. Unit: lux (lx) = lumens per square metre.

Note: the orientation of the surface may be defined, e.g. horizontal, vertical; hence horizontal illuminance, vertical illuminance.

For specification, illuminance should be specified as maintained illuminance and should take one of the following values: 1.0×10^N lux, 1.5×10^N lux, 2.0×10^N lux, 3.0×10^N lux, 5.0×10^N lux, 7.5×10^N lux (where N is an integer). The area over which the illuminance is to be calculated or measured shall be specified.

Illuminance uniformity: ratio of minimum illuminance to average illuminance on a surface.

Note: use is also made of the ratio of minimum illuminance to maximum illuminance, in which case this should be specified explicitly.