

APPENDIX C

GLOSSARY

altitude (solar)	The angular distance of the sun measured on a great circle that passes perpendicular to the plane of the horizon through the sun and through the zenith. It is measured positively from the horizon to the zenith, from 0 to 90 degrees.
aperture	The rough opening in the surface of a building that admits daylight. The aperture opening does not account for framing or glazing.
artificial sun	An electric lighting system which emits light which simulates parallel rays of the sunlight.
azimuth (solar)	The angular distance between the vertical plane containing the sun (solar azimuth) and the vertical plane of a wall of known compass orientation.
azimuth (wall)	The angular distance between the vertical plane containing the sun (solar azimuth) and the vertical plane of a wall of known compass orientation.
charge-coupled device (CCD)	A microelectronic circuit element used for the image sensor array of a solid-state video camera.
clear sky (CIE)	A reference cloudless sky condition defined by Kittler in 1965 and adopted by the CIE in 1973.
clear sky (NOAA)	A sky that has less than 30 percent cloud cover, with the solar disk unobstructed.
coefficient of	The ratio of the luminous flux from a source calculated as received utilization (CU) on the work plane to the luminous flux emitted by the source.
configuration factor	The ratio of illuminance on an infinitesimal surface, or point (due to (CF)flux directly received from a lambertian source surface) to the exitance of the source surface.
cosine law	The illuminance on any surface varies as the cosine of the angle of incidence from a point surface of light.
daylight factor (DF)	A relative measure of daylight illuminance at a point on a given plane expressed as the ratio of the illuminance on the given plane at that point to the simultaneous exterior illuminance on a horizontal plane from the whole unobstructed sky. Direct sunlight is excluded from both interior and exterior values of illuminance.

design daylight	A daylight factor based upon the ratio of the midrange illuminance factor (DDF) target from the IES design guidelines to the mean horizontal exterior illuminance for a clear or overcast sky. Not part of the CIE definition of a daylight factor.
design sunlight	A sunlight illuminance ratio that needs to be provided by a canopy illuminance system to compensate for the deficient illuminance from clear sky ratio (DSIR) only.
design illuminance	The interior illuminance level used as a guideline in establishing the lighting design and performance characteristics of daylighting and electric lighting system.
direct component	The portion of daylight from unobstructed sky that arrives at the work plane without being reflected by room surfaces. See sky component.
direct sunlight	The visible radiation received on a surface directly from the sun, without reflection by the sky.
diffuse daylight	The visible radiation received on an unobstructed surface from the sky, including background sky luminance, horizontal luminance, and circumsolar luminance.
disability glare	Glare resulting in reduced visual performance and visibility.
discomfort glare	Glare producing visual comfort that does not necessarily interfere with visual performance.
effective transmittance (ET)	The ratio of the daylight illuminance measured with canopy to that measured without canopy.
exterior illuminance	The quantity of total daylight and/or sunlight falling on a horizontal or vertical exterior surface.
externally reflected	The ratio of that part of the daylight illuminance, at a point, that is component (ERC) received from exterior reflecting surfaces to the simultaneously measured exterior daylight on a horizontal surface.
glare	The sensation produced by luminance within the visual field that is sufficiently greater than the luminance to which the eyes are adapted to cause annoyance, discomfort, or loss of visual performance and visibility.

glare index	The degree of glare caused by all bright sources in the field of view based on the relationship between the luminance and apparent size of source and background luminance.
hemispherical sky simulator	A dome-shaped enclosure that is illuminated by a series of light sources around the circumference of the dome to simulate sky luminance for the purposes of testing physical daylighting models.
hemispherical transmittance (HT)	The ratio of the transmitted flux leaving a surface or medium to the incident flux.
high-intensity discharge lamp (HID)	Lamps in which light is produced by passing electric current through a gas, ionizing the gas, and permitting a current to flow between two electrodes. The resulting light is a by-product of the gas that continuously changes atomic structure.
illuminance	The density of the luminous flux incident on a surface, lumens per unit area.
illumination	The act of illuminating or state of being illuminated. e.g. task levels on work plane.
internally reflected component (IRC)	The ratio of that portion of the daylight illuminance received at a measurement point after being reflected one or more times from room surfaces to the exterior illuminance on a horizontal surface.
interreflected component	The portion of the luminous flux from a source arriving at the work plane after being reflected one or more times from room surfaces.
inverse square law	The law stating that the illuminance E at a point on a surface varies directly with the intensity I of a point source, and inversely as the square of the distance d between the source and the point. If the surface at the point is normal to the direction of the incident light, the law is expressed by $E = I / d^2$.
lambertian surface	A surface that emits or reflects light in accordance with Lambert's cosine law. A lambertian surface has the same luminance regardless of viewing angle.
light	Radiant energy that is capable of exciting the retina and producing a visual sensation. The visible portion of the electromagnetic spectrum extends from about 380 to 780 nm.

luminance	The quotient of the luminous flux at an element of the surface surrounding the point, and propagated in directions defined by an elementary cone containing the given direction, by the product of the solid angle of the cone and the area of the orthogonal projection of the element of the surface on a plane perpendicular to the given direction.
lumen method	A daylighting design procedure used for determining the relationship between a daylight aperture, the room characteristics, and the illuminance at several specified points on the work plane in the room.
luminance ratio (LR)	Ratio of the average luminance on visual task area to the average of surrounding luminance. In this study, the ratio between the average luminances on two contiguous wall areas.
lux, lx	The SI unit of illuminance. One lux is one lumen per square meter. Equivalent to 10.76 fc.
orientation	The relation of a building surface with respect to compass orientation. Usually expressed as either a compass heading or a degree heading.
overcast sky (CIE)	The CIE standard overcast sky was introduced in 1955. This sky model assumes that the zenith is three times brighter than the sky at the horizon.
overcast sky (NOAA)	One that has 100 percent cloud cover; the solar disk must be obstructed.
photometric sensor	An instrument for measuring photometric quantities such as luminance, luminous intensity, luminous flux, and illuminance.
physical scale	A method of daylight analysis whereby a scaled representation of a modeling room or building is analyzed for lighting performance and lighting quality under either a real or artificial sky.
point light source	A light source in which the light rays are diverging. Electric light sources are considered point light sources.
quality of light	Pertains to the distribution of luminance in a visual environment. The term is used in a positive sense and implies that all luminances contribute favorably to visual performance, visual comfort, ease of seeing, safety, and aesthetics for the specific visual tasks involved.

quantity of light	The product of the luminous flux by the time it is maintained at a constant level at the work plane. It is the time integral of luminous flux.
reflectance	The ratio of reflected flux to incident flux.
sawtooth	A roof canopy system in which the glazing is placed on the short, usually vertical, surface of a series of roof serrations.
sidelighting	The use of daylight apertures on the walls of buildings to provide daylight that sweeps across tasks. Typically used to illuminate a horizontal work plane.
sky component (SC)	The ratio of that part of the daylight received at a work plane from the sky to the simultaneously measured exterior illuminance on a horizontal surface. Refers only to daylight and not sunlight. See direct component
sky factor (SF)	$1/\pi$ of the area orthographically projected on the plane from the surface intercepted on a sphere of unit radius with its center at the point by a cone having the point as its apex and the contour of that part of sky visible from the point as its base.
steradian (sr)	A solid angle subtending an area on the surface of a sphere equal to the square of the sphere radius.
sunlight	Direct visible radiation from the sun. Called the direct component when considering the direct, diffuse, and ground-reflected components.
sunlight illuminance ratio (SIR)	The ratio of interior sunlight illuminance to exterior direct sunlight illuminance. It does not contain illuminance from sky.
task lighting	Localized light sources used to illuminate visually demanding activities such as reading.
toplighting	Daylighting concepts in the roof of a building that provide light from above to illuminate horizontal, sloped, or vertical work planes.
translucent	The ability to transmit light but causing sufficient diffusion to eliminate perception of distinct images.
transmittance	The ratio of the transmitted flux to the incident flux. e.g. ET, HT

transparent uniform sky	The ability to transmit light with little distortion of images. An isotropic sky in which the luminance in all directions is equal. Used to describe both an overcast and clear sky, without sun. Assumes that brightness at zenith and horizon are equal.
wavelength	The distance between two successive points of a periodic wave in the direction of propagation, in which the oscillation has the same phase. In daylighting, wavelength is measured in nanometers.
work plane	The plane at which work usually is done, and on which the illuminance is specified and measured. Unless otherwise indicated it is assumed to be a horizontal plane 0.76 m (30 inches) above the floor.
zenith	The point at the top of a hemispheric sky dome.
zenith luminance	The luminance at the point at the top of a hemispheric sky dome.