Addendum 3 for

ANSI/IES RP-16-17, Nomenclature and Definitions for Illuminating Engineering

If you, as a user of ANSI/IES RP-16-17, believe you have located an error not covered by the following revisions, please e-mail your information to Pat McGillicuddy, pmcgillicuddy@ies.org, or send a letter to Pat McGillicuddy, Manager of Standards Development, IES,120 Wall St., 17th Floor, New York, NY 10005. Additions will be posted as they become available.

Addendum 3 was approved by the IES Standards Committee on February 28, 2019, and by the American National Standards Institute (ANSI) on July 29, 2019.

New terms:

11.7 obtrusive light
Direct or reflected light that, because of quantitative, directional or spectral attributes in a given context, causes annoyance, discomfort, distraction or a reduction in the ability to see.

11.7.3 sky glow
The brightening of the night sky that results from the scattering and reflection of light from the constituents of the atmosphere (gaseous molecules and aerosols), in the direction of the observer. It has two separate components: natural sky glow and artificial sky glow.

11.7.3.1 natural sky glow
That part of sky glow which is attributable to natural sources. It is composed of starlight, zodiacal light (scattering of sunlight from dust in the solar system), and airglow (radiation from luminescent processes in the earth’s upper atmosphere).

11.7.3.2 artificial sky glow
That part of sky glow which is attributable to scattering of light from human-made sources of radiation (e.g., outdoor electric lighting), including radiation that is emitted directly upward and radiation that is reflected from surfaces.

8.4.10 absolute photometry
Measurement of the actual photometric quantities produced by a lighting product under test. Also called direct photometry. (See also relative photometry.)

8.4.11 relative photometry
Measurement of the photometric quantities of a lighting product, which are then scaled to represent performance at the rated lumen or spectral output of a test lamp. (See also absolute photometry.)

7.5.5 attenuation coefficient
($\mu$)
The decrement in flux per unit distance in a given direction within a medium and defined by the relation:
\[
\phi(r) = \phi(0) \cdot e^{-\mu r}
\]
where \( \phi(r) \) is the flux at a distance \( r \) from a reference point having flux \( \phi(0) \).

**11.5.19 luminance coefficient, \( q \)**

In Roadway Lighting:

At a surface of a medium, in a given direction, under specified conditions of illumination: The quotient of the luminance of the surface element in the given direction by the illuminance on the medium, expressed by:

\[
q = \frac{L}{E},
\]

where:

- \( L \) is the luminance in cd/m\(^2\)
- \( E \) is the illuminance in lx

Unit: sr\(^{-1}\)

**11.5.20 reduced luminance coefficient, \( r \)**

In Roadway Lighting:

The luminance coefficient, \( q \), multiplied by the cube of the cosine of the angle of incidence, \((\cos \gamma)^3\), of the light on the point (see figure):

\[
r = q (\cos \gamma)^3,
\]

where:

- \( q \) is the luminance coefficient in sr\(^{-1}\)
- \( \gamma \) is the angle of incidence in degrees (the road surface is flat and not sloped up-down or right-left)

Unit: sr\(^{-1}\)

*Note 1:* The angle of observation \( \alpha \), affects the value of \( r \). By convention, this angle is fixed at 1° for roadway lighting calculations.

*Note 2:* The reduced luminance coefficient is used for determining the luminance of a point of infinitesimal size in the roadway luminance formula.
(Refer to ANSI/IES RP-8-18 for the formula for roadway luminance.)

11.5.21 r-table

In Roadway Lighting:

A table of reduced luminance coefficient values (see Section 11.5.20) for a category of pavement. Values in the table are dependent on the variables $\beta$ and $\tan \gamma$, where $\beta$ is 180 minus the angle (as seen in plan view) between the line from the observer to the point of infinitesimal size and the line from the luminaire to the point, in degrees. The value of $\tan \gamma$ is the distance along the plane of the road under the luminaire to the discrete point, divided by the mounting height of the luminaire. (See figure.)

The factors given in the table have been multiplied by $10^4$. This multiplying factor, $MF$, is divided out in the formula for roadway luminance at the point. (Refer to IES RP-8-18 for the formula for roadway luminance and the r-tables themselves.)

6.12 solid state lighting (SSL)
Lighting that uses light-emitting diodes (LED), organic light-emitting diodes (OLED), or polymer light-emitting diodes (PLED) as sources of illumination.

4.11 spectral power distribution (SPD)
A tabular or graphical representation of the radiant power emitted by a source at each wavelength or within bands of wavelengths across the electromagnetic spectrum.

7.5.3.14.1 spectral transmittance distribution
A tabular or graphical representation of the radiant power transmitted through a medium at each wavelength, or within bands of wavelengths, across the electromagnetic spectrum, or some portion of it.

13.3.3 spill light
In Floodlighting:
The light emitted by a floodlight that is outside the floodlight distribution as defined by the field angle classification.

2.6.3 total spectral radiant flux
(W/nm)
Spectral radiant flux emitted from a source, integrated over all directions (4π sr).

New controls terms:

13.3.5 institutional tuning
Adjustment of the maximum light level and/or the spectrum in a space, set by the owner, tenant, or designer.

13.3.6 spectral tuning
Adjustment of a source spectrum in response to task, space, or occupant needs.

13.3.7 high-end trim
The capability of a lighting control system to limit the maximum light output to a level below its maximum factory setting.

13.4 lighting system
A collection of daylighting and/or electric lighting equipment that function together to generate, deliver and control the light in an application.

13.5 networked lighting control system
A lighting control system with multiple components that are interconnected, permitting one-way or two-way communication with the devices.

13.6 lumen maintenance control
A lighting control strategy that increases light source power over time to maintain light levels as sources age, dirt accumulates in luminaires, or both.

Note: This strategy allows for energy savings early in the life of a system.
Also known as lumen depreciation compensation or constant lumen output.

13.7 load shedding

A control strategy for selectively reducing the load of a system on a temporary basis to reduce energy usage. NOTE: A building manager or utility may utilize load shedding to avoid peak pricing or to avoid a condition where electricity demand exceeds supply.

13.8 photocell

A solid-state device that converts light into electrical energy by producing current, as in a photovoltaic cell, or uses light to regulate the flow of current, as in a photoconductive cell.

Added to Index only:

constant lumen output, see lumen maintenance control

lumen depreciation compensation, see lumen maintenance control