

CHAPTER 19 LIGHTING

SECTION 19.10 INTENT

The intent of this chapter is to implement DarkSky principles; conserve energy, protect the natural environment from the adverse effects of artificial light; curtail the degradation of the nighttime visual environment; prevent excessive glare; and ensure safe conditions.

SECTION 19.20 GENERAL REQUIREMENTS

A. APPLICABILITY

This section applies to all properties in the Township.

B. LIMITATIONS

Light shall be confined on-site by the direction of the fixture, shielding, or adjustment of the level of brightness.

C. GLARE

Lighting shall not be directed in any manner that causes glare onto neighboring residential property or distraction to drivers.

D. DIRECTION

All outdoor lighting shall be directed down or directly onto the object being illuminated. Lighting or glare shall not be directed toward streets, adjacent properties, or the night sky.

E. PROHIBITED LIGHT SOURCES

The following light sources are prohibited:

1. **Laser Source.** The use of laser source light or any similar high-intensity light for outdoor advertising or entertainment is prohibited.
2. **Searchlights.** The operation of searchlights for advertising purposes is prohibited.
3. **Flashing Lights.** Except for motion-activated security lighting and temporary holiday lighting, permanent lights that flash, move, revolve, rotate, scintillate, blink, flicker, vary in intensity or color, or use intermittent electrical pulsation are prohibited.
4. **Public Safety.** Lighting that is similar to that used for traffic control devices or emergency vehicles is prohibited.

F. PARKING LOTS

1. **Requirement.** All non-residential and multi-family residential parking lots shall be illuminated for customer and resident safety.
2. **Mounting.** Lights to illuminate parking lots shall not be attached to any building except for illuminating parking spaces that are within 10 feet of building walls.

G. LIGHTING REDUCTION

For commercial and industrial properties, light levels shall be reduced 50 percent after the close of business.

SECTION 19.30 LIGHTING PLANS

A. LIGHTING PLAN SUBMITTAL

An overall lighting plan is required for all non-residential and multi-family parking lots, security lighting, general site lighting, and all outdoor storage or display area lighting. The Zoning Administrator or Planning Commission shall require a photometric plan for other areas illuminated on a site to ensure that the intent and requirements of this section are met.

B. SUBMITTAL REQUIREMENTS

Compliance with the lighting design criteria shall be demonstrated by submitting the following information as part of the required site plan:

1. Lighting plan (as part of the site plan package) showing light fixture locations and type designations.
2. Fixture mounting height(s).
3. Type and number of lighting fixtures.
4. Lamp source type (bulb type, i.e. high-pressure sodium, LED, etc.), lumen output, color temperature, and wattage.
5. Lighting manufacturer-supplied specifications (cut sheets) that include photographs or illustrations of the fixture(s), indicating the certified full cut-off characteristics or B.U.G. rating of the fixture, or demonstrating that the fixture is fully shielded.
6. A photometric plan shall include the following:
 - a. Maximum illuminance levels should be expressed in ground-level footcandle measurements on a grid of the site showing footcandle readings in every five or ten-foot square.
 - b. The grid shall include light contributions from all sources (i.e. pole-mounted, wall-mounted, sign, and street lights).
 - c. Footcandle measurements shall be shown five feet beyond the property lines.
 - d. A calculation summary indicating footcandle levels on the lighting plan, noting the maximum, average, and minimum, as well as the uniformity ratio of maximum to minimum, and average to minimum levels. Average and uniformity ratios shall only be calculated within the parking spaces and drive aisles and shall exclude other illuminated areas of the site.

SECTION 19.40 LIGHT FIXTURE REQUIREMENTS

A. APPLICABILITY

This section applies to all properties in the Township.

B. COLOR TEMPERATURE

1. The lighting color temperature of new and replacement light fixtures shall not exceed 2,700 Kelvins in residential zoning districts.

2. The lighting color temperature of new and replacement light fixtures shall not exceed 4,000 Kelvins in commercial and mixed-use and industrial zoning districts.

C. FIXTURE TYPE

Lighting fixtures for non-residential and multi-family residential uses shall be a down-lighted type and fully cut off, and the light shall not be allowed to be emitted above the fixture. For LED lighting, up-light shall be zero for “B.U.G.” ratings. Fixtures shall comply with the following requirements:

1. A full cut-off fixture shall have no direct up-light and shall reduce glare by limiting the light output to less than 10 percent at and below 10 degrees below the horizontal.
2. If the applicant cannot provide manufacturer confirmation of full cut-off characteristics of light fixtures, the fixture shall be fully shielded, which will be determined by visual inspection of the fixture or a specification sheet. Fully shielded light fixtures are constructed and installed in such a manner that all light emitted by it, either directly from the lamp or a diffusing element or indirectly by reflection or refraction from any part of the fixture, is projected below the horizontal.
3. Under-canopy lighting shall be mounted flush with the canopy surface.
4. Examples of compliant and noncompliant light fixtures are shown in Figures 19-1 and 19-2.

D. MOUNTING HEIGHT

Light fixture mounting heights shall not exceed the following:

TABLE 19.40 D: LIGHT FIXTURE MOUNTING HEIGHT		
Zoning District		Maximum Height (ft).
Residential		15
Commercial and Mixed-Use districts	Less than 100 feet from a residential zoned lot	20
	100 feet or more from residential zoned lot	25
Industrial Districts	Less than 100 feet from a residential zoned lot	20
	150 feet or more from residential zoned lot	30

Noncompliant: Fixtures that produce light trespass and glare

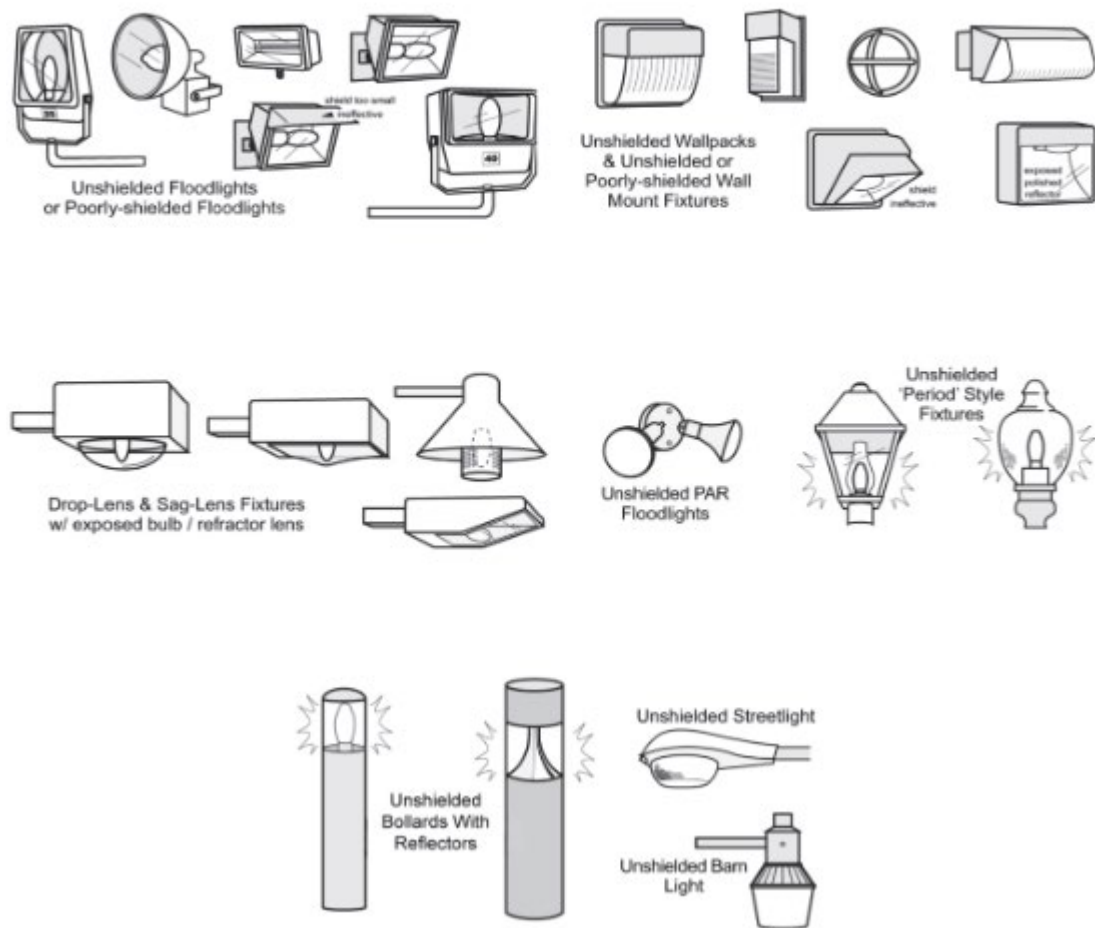


Figure 19-1 Noncompliant Light Fixtures

Compliant: Fixtures that shield the light source to minimize glare and light trespass and to facilitate better vision at night

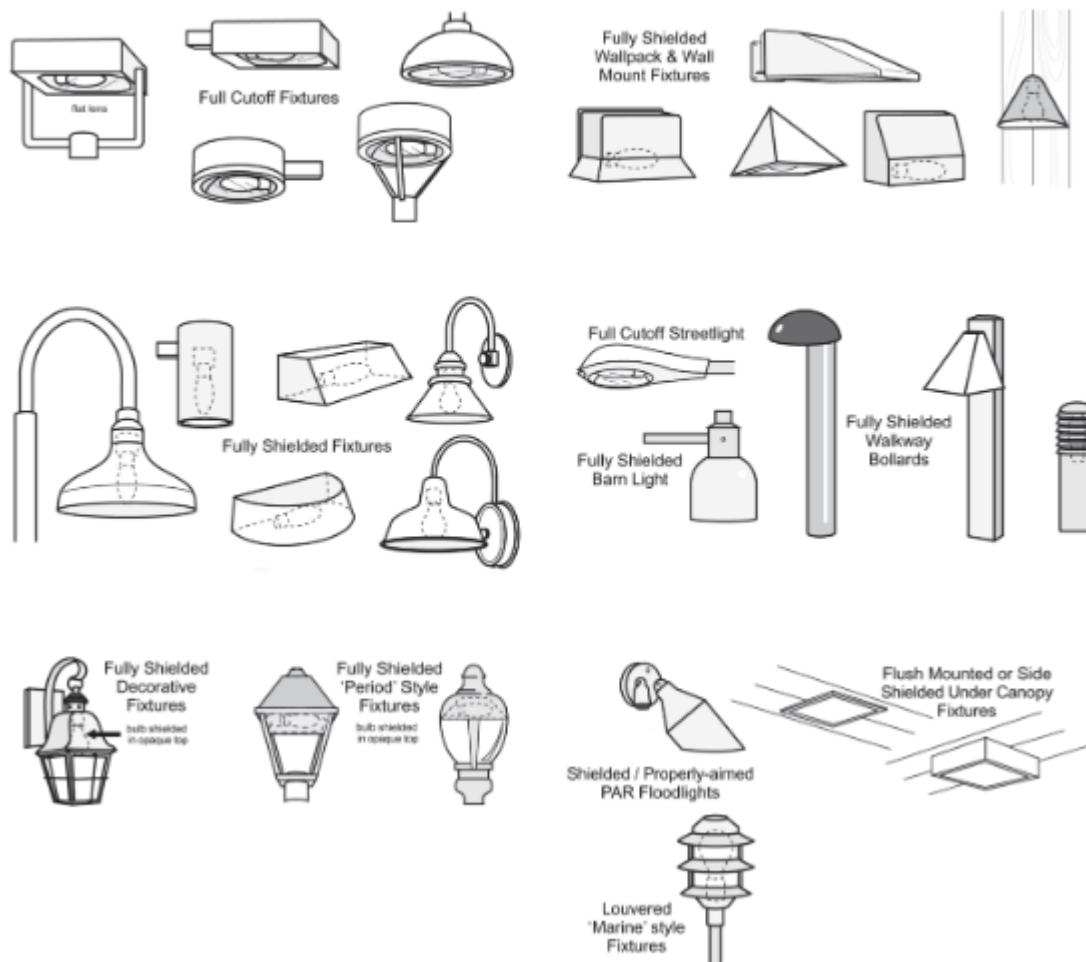


Figure 19-2 Compliant Light Fixtures

SECTION 19.50 SITE LIGHTING LEVELS

A. APPLICABILITY

This section applies to all properties in the Township.

B. ILLUMINATION LEVELS

Light levels shall meet the requirements in Table 19.50 B.

TABLE 19.50 B: REQUIRED SITE ILLUMINATION				
Location on Site	Min. fc	Max. fc	Ave. fc	Uniformity Ratio Max. to Min./ Ave. to Min.
Parking Lots	.5 fc	10 fc	1 fc	10:1 / 4:1
Under Canopies Such as Gas Stations, Drive-Thru Bank Porte-Cochere	3 fc	20 fc	-	-
Along Front Lot Line Adjacent to the Street Frontage	0 fc	1 fc	-	-
Along a Lot line Adjoining a Non- Residential Use or District	0 fc	1 fc ¹	-	-
Along a Lot line Adjoining a Residential Use or District	0 fc	0 fc	-	-
Non-Residential Outdoor Storage	0 fc	10 fc	-	-
All Other Lighting	-	10 fc	-	-

SECTION 19.60 LIGHTING MODIFICATIONS

A. AUTHORITY

The Planning Commission may modify the illumination requirements in Table 19.50 B and other lighting requirements based on a review of the applicant's proposal against industry standards and advanced lighting technology, so long as lighting plans ensure safe conditions and minimize impact on adjacent properties.

B. UNIQUE LAND USES

As part of site plan review by the Planning Commission, lighting systems not complying with the technical requirements of this chapter but consistent with its intent may be installed for the following land uses:

1. Sports fields and stadiums.
2. Specialized lighting for outdoor recreational uses.
3. Other unanticipated uses.

¹ The light level along a non-residential lot line may be increased to the maximum footcandle level where there is shared access/vehicular connections or the adjacent use is a similar use.

C. CONSIDERATIONS

The Planning Commission shall consider the following during the review of lighting modification requests:

1. The amount of space on the site available for lighting.
2. Existing lighting on the site and on adjacent properties.
3. The type of land use on the site and the size of the development.
4. The potential impact on existing and proposed adjacent land uses.
5. The effect that the required lighting would have on the operation of the existing or proposed land use.

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