

State of Texas

**In the Commissioners Court
of
Brewster County, Texas**

**Orders Regulating Outdoor Lighting
In Brewster County Texas**

Brewster County Commissioners Court Adopts these Orders pursuant to §234.002, Local Government Code, VTCA, for the purpose of preserving dark skies and protecting the continued viability of McDonald Observatory.

These Orders Regulating Outdoor Lighting In Brewster County Texas supersede any previous Orders Regulating Outdoor Lighting In Brewster County Texas

1. DEFINITIONS - In these orders:

1.1. "Outdoor Lighting" means temporary or permanent lighting that is installed, located, or used in such a manner to cause light rays to shine outdoors including lighting for billboards, streetlights, searchlights used for advertising purposes, externally or internally illuminated on or off-site advertising signs, and area-type lighting.

Nonresidential fixtures that are installed indoors that cause light rays to shine outside are considered outdoor lighting for the intent of this article (see Exhibit 3).

1.2. "Installed" means the initial installation or replacement of outdoor lighting as defined herein.

1.3. "Fully Shielded" means an outdoor luminaire constructed so that in its installed position, all of the light emitted from the light fixture is projected below the horizontal plane passing through the lowest light-emitting part of the fixture (see Exhibit 4).

1.4. "Spotlight" means a light fixture having a narrow beam.

1.5. "Light source" means a light emitting portion of the luminaire and any diffusing elements and surfaces intended to reflect or refract light emitted from the lamp individually or collectively, for example, a lamp, bulb, lens, highly reflective surface, or frosted glass.

1.6. "Light trespass" means light emitted from fixtures designed or installed in a manner that unreasonably causes light to fall on a property other than the one where the light is installed, in a motor vehicle drivers' eyes, or upwards toward the sky. If the light source is visible from another property or the public roadway, the light is creating

light trespass. It is expected that the illumination produced by a light source may be viewed from other properties but the light source itself should not be visible from other properties. (See Exhibit 6 for educational illustration about light trespass.)

1.7. "Light Pollution" means the unintended, adverse and/or obtrusive effect of the use of outdoor light at night.

1.8. "Lumen" means the unit of measurement used to quantify the amount of light produced by a bulb or emitted from a light source. Lumen values are typically provided on lighting manufacturer packaging or data sheets. For the purposes of this Order, unless otherwise stated, the lumen output values shall be the initial lumen output ratings as defined by the manufacturer. Lumen values are typically provided on lighting manufacturer packaging or data sheets

1.9. "Lumens per Net Acre" means the total outdoor light output, as defined in this Order, divided by the number of acres, or part of an acre with outdoor illumination. Undeveloped, non-illuminated portions of the property may not be included in the net acreage calculation.

1.10. "Luminaire" means a complete lighting assembly or lighting fixture, consisting of a lamp, housing, optic(s), and other structural elements, but not including any mounting pole or surface (see Exhibit 2).

1.11. "Correlated Color Temperature (CCT)" means a measure of the color properties of light emitted by lamps, being equal to the temperature, expressed in Kelvins (K). CCT values are typically provided on lighting manufacturer packaging or data sheets (see Exhibit 5).

1.12. "Electronic Message Display" means any illuminated sign of an informative or advertising nature, whether on-or off-premise, and operable at night, whose content is made visible to the viewer by means of luminous elements under active electronic control and therefore subject to alteration in Order to vary the content of the message. Electronic displays may be either static or dynamic in terms of light color and intensity.

1.13. "Nit" is the standard unit of measure of luminance used for internally illuminated signs, digital signs, or electronic message displays.

1.14. "Greenhouse" means any building that is constructed of glass, plastic, or other transparent material in which plants are grown under climate-controlled conditions and includes hoop houses and other similar structures.

1.15. "Decorative/holiday lighting" means low-intensity string lights, whose luminous output does not exceed fifty (50) lumens per linear foot, and fully-shielded floodlights,

whose luminous output does not exceed one thousand (1,000) lumens and which are aimed and oriented in such a way as to not create light trespass onto another property nor into the night sky, operated only during prescribed periods of time during the calendar year.

1.16. "Flood light" shall mean a light fixture having a wide beam.

2. GENERAL REQUIREMENTS

2.1. New lighting installations:

All Outdoor Lighting fixtures installed, replaced, or repaired after the effective date of this Order shall be fully shielded except as otherwise specified in this Order. All new construction and/or new luminaires installed (including replacements for existing fixtures) shall comply after the adoption of this Order.

All outdoor lighting is encouraged to be turned off when no one is present to use the light. Adaptive controls such as timers, motion sensors, and half night photocells can assist in this effort.

See Exhibit 1 for an illustration of best outdoor lighting practices.

2.2. Existing fixtures:

Outdoor lighting on any property that is not in conformance with this Order shall be brought into conformance with this Order within five (5) years from the date of adoption of this Order.

2.3. Color Temperature:

(1) The Correlated Color Temperature (CCT) of luminaries shall not exceed 2700 Kelvins.

(2) Luminaries rated at or below 2200 Kelvin are encouraged for better nighttime visibility.

2.4. Light Trespass:

(1) Light trespass is prohibited. No luminaire, except governmental streetlights, shall create conditions of light trespass. Governmental street lights may only create light trespass below it within a radius of four (4) times the mounting height.

(2) All outdoor lighting, except governmental streetlights, shall be shielded so that the light source shall not be visible from any other property.

2.5. Lumens Cap:

The lumen per net acre values are an upper limit and not a design goal; design goals should be the lowest levels that meet the requirement of the task. Lumen per net acre values exclude governmental owned street lights used for illumination of public rights-of-way and outdoor recreation facilities.

(1) Nonresidential Property. Total outdoor light output installed on any nonresidential property shall not exceed 50,000 lumens per net acre in any contiguous illuminated area;

(2) Residential Property. Total outdoor light output installed on any residential property shall not exceed 25,000 lumens per net acre in any contiguous illuminated area.

2.6. Sign Lighting:

All externally or internally illuminated signs shall be extinguished at 11:00 p.m. or within one (1) hour of the end of normal business hours, whichever occurs later.

(1) Externally Illuminated Signs:

(a) Externally illuminated signs shall be lit only from the top of the sign, with fully shielded luminaires designed and installed to prevent light from spilling beyond the physical edges of the sign.

(b) All external sign illumination must comply with the Correlated Color Temperature (CCT) requirements of this article.

(2) Internally Illuminated Signs:

Outdoor internally illuminated signs (whether free standing or building mounted) shall be subject to all the following requirements:

(a) The sign must be constructed with an opaque background and translucent letters and symbols or with a colored background and lighter letters and symbols. (see Exhibit 7 for examples).

(b) The internally illuminated portion of the sign cannot be white, cream, off-white, light tan, yellow or any light color unless it is part of a registered logo that does not

have an alternate version with dark tones. Light tone colors such as white, cream, off-white, light tan, yellow or any light color are permitted in the logo only, provided that such colors in the logo shall represent not more than 33% of the total sign area permitted.

(c) The internal illumination, between sunset and sunrise, is to be the lowest intensity needed to allow the sign to be visible for up to 1/2 mile from its installation and shall not exceed 50 nits.

(d) The luminous surface area of an individual sign shall not exceed 50 square feet.

(e) Electronic message displays are discouraged and shall comply with outdoor lighting curfews stipulated in this ordinance. Messages appearing on electronic displays shall not be displayed for less than (30) seconds and shall require no longer than 0.25 seconds to transition from one message to another. Moving and/or flashing text or images are prohibited.

2.7. Greenhouse Lighting:

All of the lighting that illuminates the translucent portion of a greenhouse or solarium must be shielded so that no direct light shines outside of the structure (see Exhibit 3).

2.8. Recreational or sports lighting:

(1) Lighting at public and private outdoor sports facilities, including but not limited to playing fields, arenas, tracks, and swimming pools, will be shielded to the greatest practical extent to reduce glare, safety hazards, light trespass, and light pollution;

(2) Will provide levels of illuminance that are adjustable according to task, allowing for illuminating levels not to exceed nationally recognized Illuminating Engineering Society of North America (IESNA) standards according to the appropriate class of play, as well as for lower output during other times, such as when field maintenance is being actively performed; and

(3) Shall be provided exclusively for illumination of the surface of play and adjacent viewing stands, and not for any other application, such as lighting a parking lot; and

(4) Must be extinguished by 11:00 p.m. or within one (1) hour of the end of active play. The outdoor sports facility lighting shall be fitted with mechanical or electronic timers to prevent lights from being left on accidentally overnight.

(5) Outdoor sports facility lighting will be exempted from the other regulations of this Order if its design and installation, as certified by a professional engineer (PE) licensed

in the state of Texas, adheres to the version of the International Dark-Sky Association's Criteria for Community-Friendly Outdoor Sports Lighting operative at the time when the construction permit is submitted to the City for review.

(6) Recreational or sports lighting is exempt from the Correlated Color Temperature (CCT) provision of this Order.

2.9. Service Station Canopies:

All luminaires mounted on or recessed into the lower surface of service station canopies shall be fully shielded and utilize only flat lenses or windows and conform to the Correlated Color Temperature (CCT) provision of this order.

2.10. Adaptive Controls:

All outdoor lighting is encouraged to be turned off when no one is present to use the light. Adaptive controls such as timers, motion sensors, and half night photocells can assist in this effort.

2.11. Tower Lighting:

No lighting of towers and associated facilities is allowed, except as required by the Federal Aviation Administration or other federal or state agency. Towers requiring white strobe lights during the day will transition to the lowest allowed intensity pulsating red lights at night.

2.12. Outdoor building or landscaping illumination:

The unshielded outdoor illumination of any building or landscaping, or sign is prohibited. Spotlights less than or equal to 500 lumens may be used, provided such fixtures are shielded and aimed to prevent light from being emitted away from the target of illumination and are rated at 2700K CCT or less.

2.13. Flagpole Lighting:

Flagpoles with a height equal to or less than twenty (20) feet above ground level may be illuminated from below. If ground-level illumination is used, flagpoles may be illuminated with spotlight type luminaires, utilizing shields or diffusers to reduce glare, whose maximum combined lumen output is 75 lumens per linear foot of pole height, measured from the level of the luminaire above grade to the top of the flagpole. Luminaires are to be mounted so that their lenses are perpendicular to the flagpole and the light output points directly toward the flag(s). Flagpole lighting shall conform to the Correlated Color Temperature (CCT) provision of this order.

2.14. String or Rope Lighting:

String, rope, festoon, bistro, and similar lighting, provided that the emission of no individual lamp exceeds fifty (50) lumens, and no installation of such lighting exceeds, in the aggregate, six thousand (6,000) lumens. These lights must have a CCT at or below 2700 Kelvin.

Outdoor light fixtures with a maximum output of 200 lumens per fixture, regardless of the number of bulbs, may be left unshielded provided the source of the light is not visible from any other property and the fixture conforms to all other stipulations of this article. The output from these fixtures shall not exceed 10% of the lumens per net acre allowed by this article.

All of the lighting that illuminates the translucent portion of a greenhouse or solarium must be shielded so that no direct light shines outside of the structure.

2.15. Mercury vapor: The installation of mercury vapor fixtures is prohibited effective November 1, 2001.

2.16. Searchlights: The operation of searchlights for advertising purposes is prohibited.

3. EXEMPTIONS

3.1. Any individual may submit a written request to the County Commissioner in whose precinct the lighting sought to be exempted is located for a temporary exemption for the requirements of these orders: The request for the temporary exemption shall contain, at a minimum, the following information.

- (a) Proposed use of outdoor light involved and reason an exemption is needed.
- (b) Type of lamp to be used.
- (c) Type of light fixture sought to be exempted.
- (d) Total wattage of lamp or lamps proposed to be exempted
- (e) Proposed location of outdoor light.
- (f) Beginning and ending date of proposed exemption.

3.2. If the Commissioner to whom the request for temporary exemption finds that the request is reasonable, that Commissioners may grant the temporary exemption.

3.3. No temporary exemption shall be granted for a period greater than six (6) months and all temporary exemptions shall be granted in writing on a form prescribed by Commissioners Court.

3.4. These orders do not apply to:

- (a) Decorative holiday lighting from November 15th through the next January 10th;
- (b) Lighting required by law to be installed on surface vehicles and aircraft;
- (c) Airport lighting required by law;
- (d) Temporary emergency lighting;
- (e) Temporary lighting at construction projects; and
- (f) Federal, State, or local governmental facilities where compelling needs for safety and security are demonstrated, and, in the determination of Commissioners Court, an exemption should be granted.

4. PENALTIES FOR VIOLATION

4.1. Violation of this order is a Class C misdemeanor, punishable by a fine of not over \$200.00

5. EFFECTIVE DATE

5.1 The effective date of this shall be May 26, 2021

5.2 Adopted by vote of Brewster County Commissioners Court on May 26, 2021.



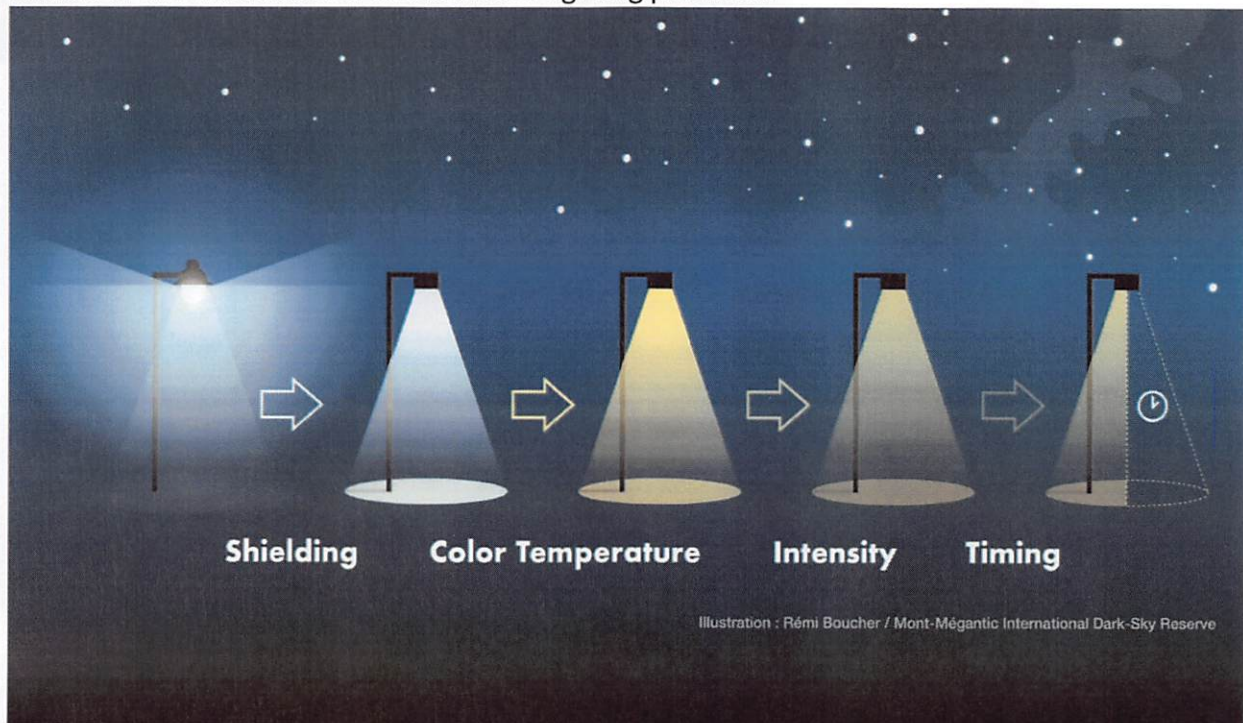
Eleazar Cano, Brewster County Judge

ATTEST: 

Sarah Vasquez, County Clerk

6.0. EXHIBITS

Exhibit 1. An illustration of best outdoor lighting practices.



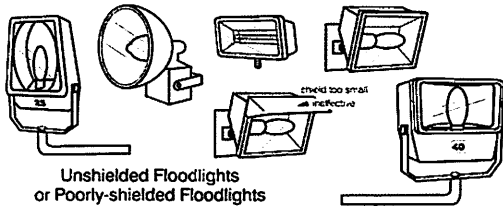
- (1) Use shielding to reclaim wasted light and direct it to the area to be lit.
- (2) Lower the correlated color temperature (CCT) from “cool” white light to “warm” white ($\leq 2700\text{K}$).
- (3) Lower the intensity to provide as much light as needed for the application, but no more.
- (4) Use adaptive controls, e.g., timers, half-night photocells, motion sensors, etc., to limit the hours the light is in use.

Exhibit 2. Examples

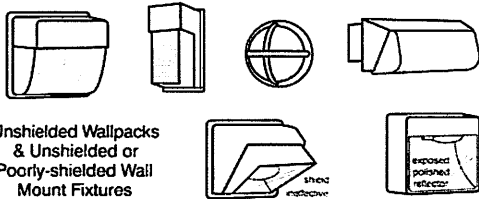
Examples of Acceptable / Unacceptable Lighting Fixtures

Unacceptable / Discouraged

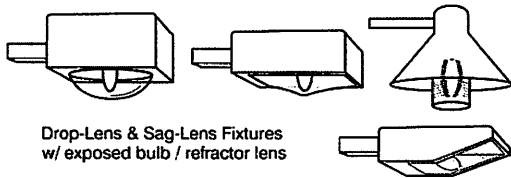
Fixtures that produce glare and light trespass



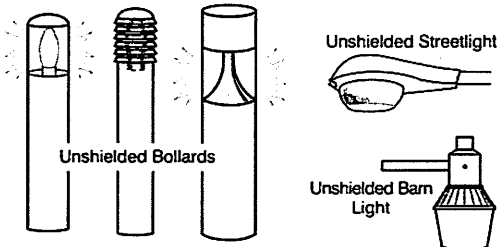
Unshielded Floodlights or Poorly-shielded Floodlights



Unshielded Wallpacks & Unshielded or Poorly-shielded Wall Mount Fixtures



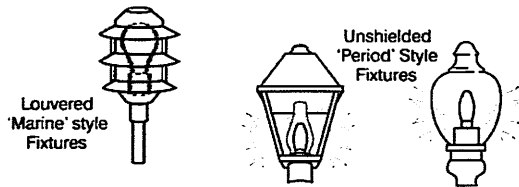
Drop-Lens & Sag-Lens Fixtures w/ exposed bulb / refractor lens



Unshielded Bollards

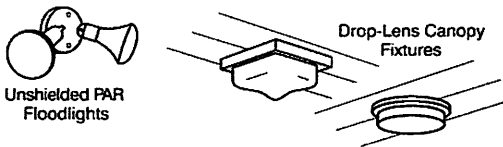
Unshielded Streetlight

Unshielded Barn Light



Louvered 'Marine' style Fixtures

Unshielded 'Period' Style Fixtures

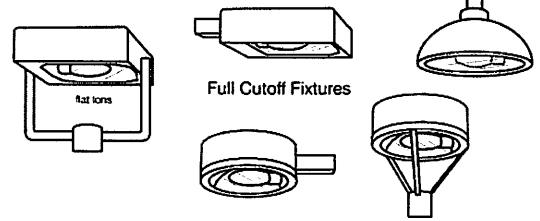


Unshielded PAR Floodlights

Drop-Lens Canopy Fixtures

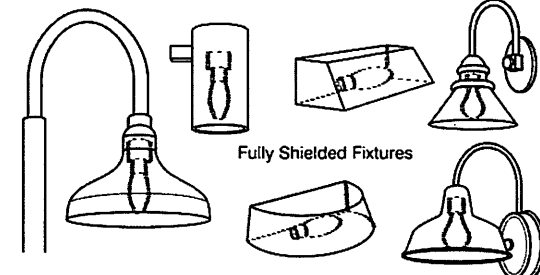
Acceptable

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

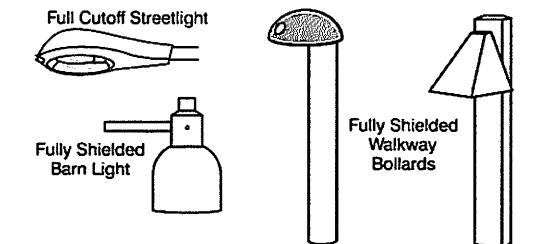


Fully Shielded Wallpack & Wall Mount Fixtures

Full Cutoff Fixtures



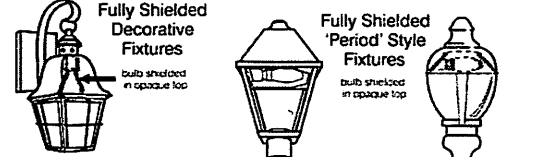
Fully Shielded Fixtures



Full Cutoff Streetlight

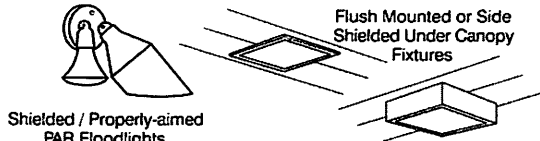
Fully Shielded Barn Light

Fully Shielded Walkway Bollards



Fully Shielded Decorative Fixtures

Fully Shielded 'Period' Style Fixtures

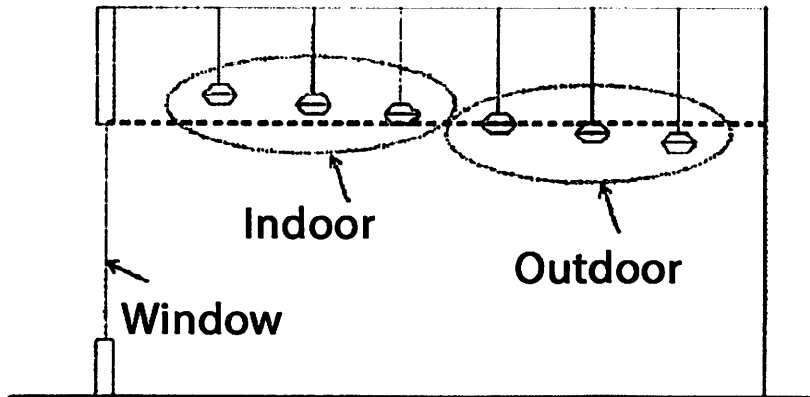


Shielded / Properly-aimed PAR Floodlights

Flush Mounted or Side Shielded Under Canopy Fixtures

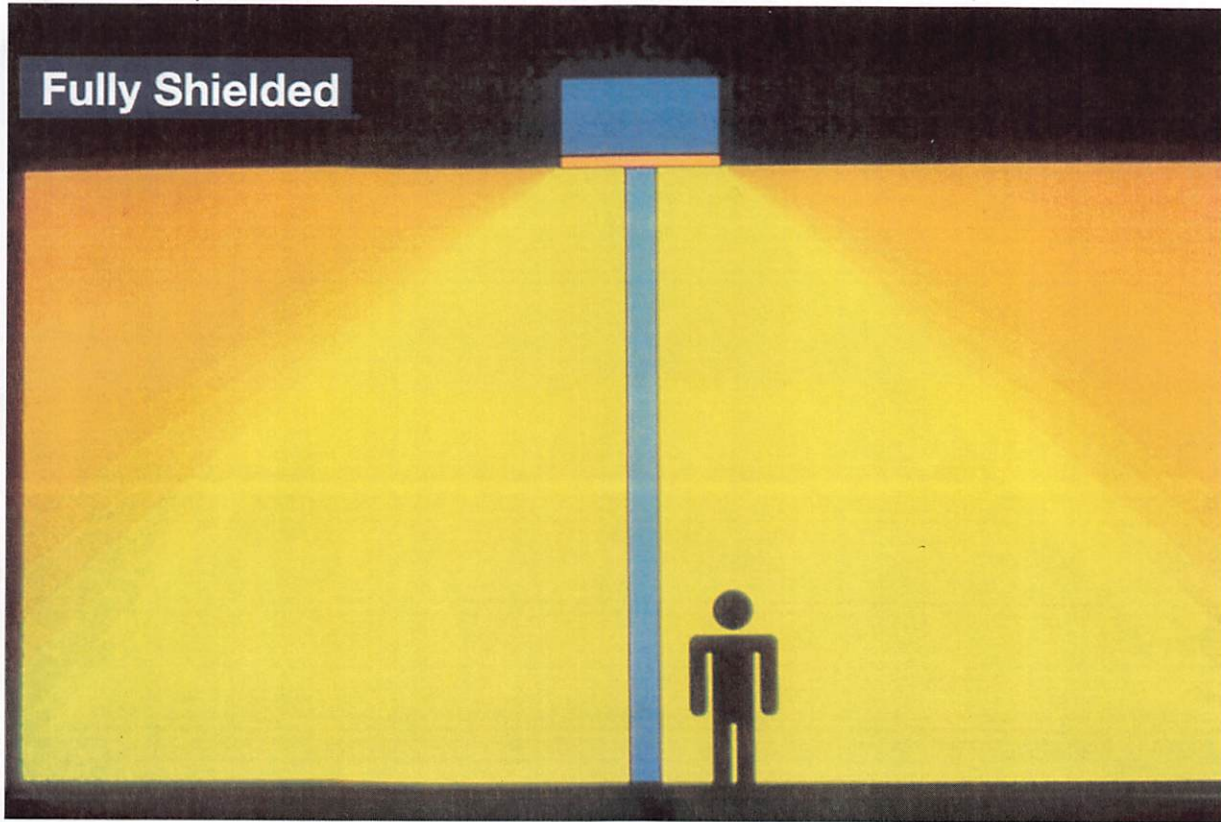
Illustrations by Bob Crein © 2005. Rendered for the Town of Southampton, NY. Used with permission.

Exhibit 3. Indoor/outdoor lighting.



Elevation view showing an example of a nonresidential application of indoor lighting, labeled "Outdoor", which will be subject to this article. The example presumes the structure in question is not elevated such that any of the luminaires labeled "Indoor" may be seen from any other property. If the structure is elevated such that the luminaires labeled "Indoor" are visible from another property then, they are actually "outdoor lighting" and subject to this article. All luminaires under skylights or other translucent roofing materials are subject to this article just as the fixtures behind the window in this example.

Exhibit 4. Fully Shielded.



"Fully Shielded" means an outdoor luminaire constructed so that in its installed position, all of the light emitted from the light fixture is projected below the horizontal plane passing through the lowest light-emitting part of the fixture.

Exhibit 5. Color Temperature.

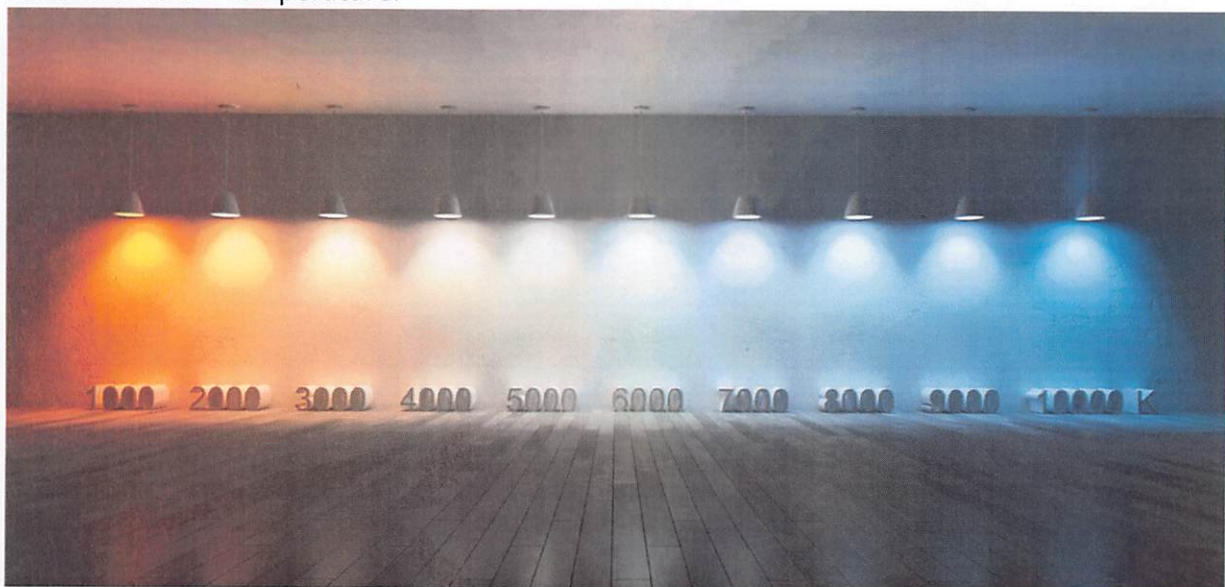


Exhibit 6. Light Trespass.

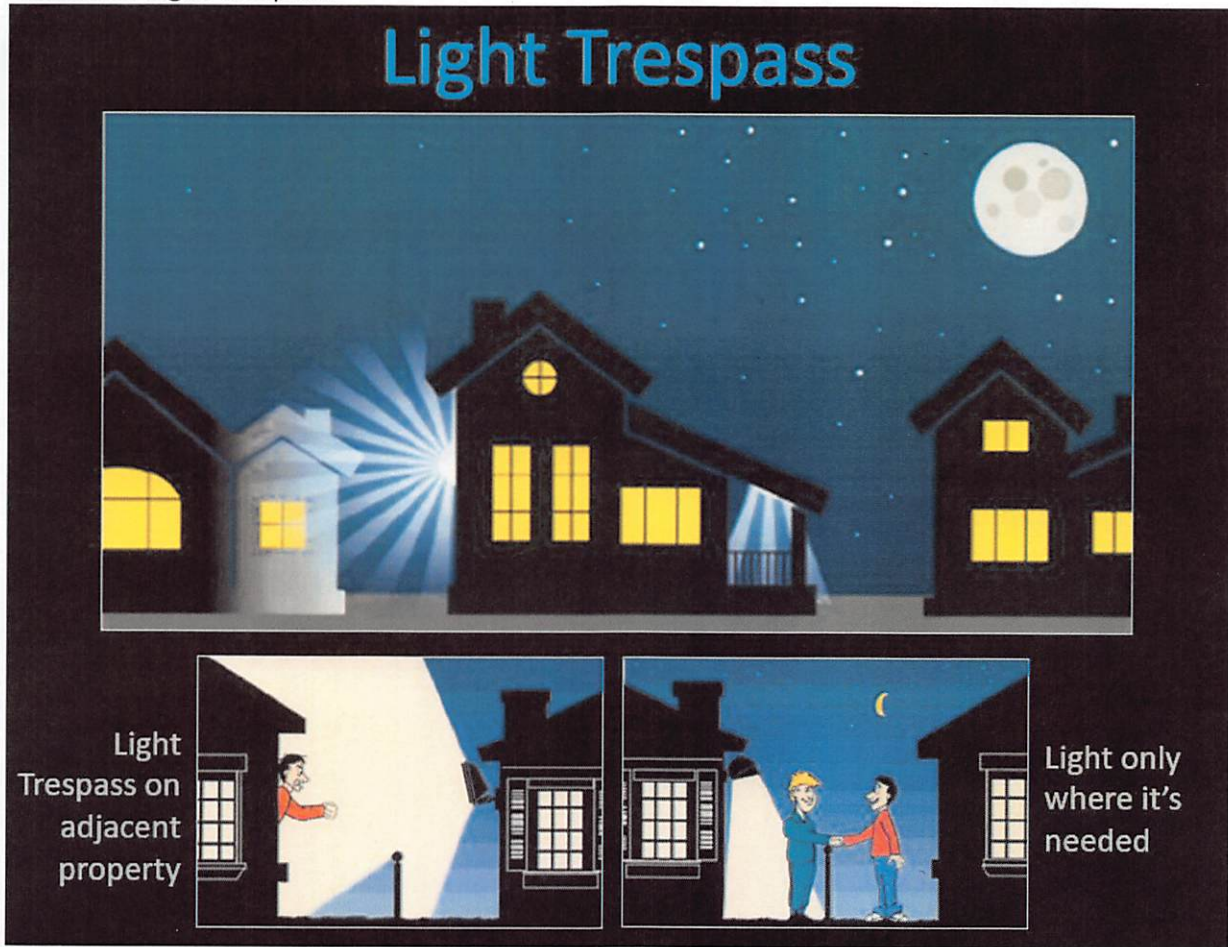


Exhibit 7. Internally Illuminated Signs.

Light Background <input type="checkbox"/>	Colored Background <input checked="" type="checkbox"/>	Opaque Background <input checked="" type="checkbox"/>