



Exterior Lighting

April 16, 2014

PLEASE NOTE: Informational Bulletins should not be used as substitutes for actual codes and regulations. Detailed information regarding codes and regulations can be obtained by calling the Code Administration Division at (307) 721-5271.

This bulletin is designed to help you with the exterior lighting requirements within the City of Laramie. Lighting standards can be found in Chapter 15.14.110 of the Laramie Municipal Code and the International Energy Conservation Code.

Please contact the Code Administration Division if you have any questions or concerns about any lighting issues.

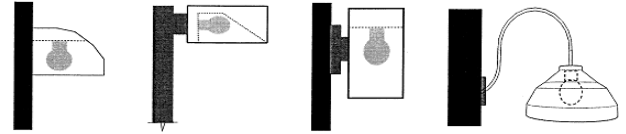
General Requirements

- All light fixtures, except street lights, shall be located so as to minimize stray light trespassing across property boundaries.
- All light fixtures shall be fully shielded. All fixtures illuminating parking and pedestrian areas shall be cutoff fixtures as defined by the Illuminating Engineering Society of North America (IESNA)

Fully shielded fixture means an outdoor light fixture shielded in such a manner that all light emitted by the fixture, either directly from the lamp or indirectly from the fixture, is projected below the horizontal as determined by photometric test or certified by the manufacturer. Frosted glass can be used in residential applications where it is no brighter than 60 watts and when it sufficiently diffuses light in order to reduce glare.

Cutoff fixture means the luminous intensity (in candelas) at or above an angle of 90° above the lowest point does not numerically exceed 2.5% of the luminous flux (in lumens) of the lamp

or lamps in the luminaire, and the luminous intensity (in candelas) at or above a vertical angle of 80° above the lowest point does not numerically exceed 10% of the luminous flux (in lumens) of the lamp or lamps in the luminaire.



- Outdoor floodlights and unshielded wall packs shall be prohibited.
- Total light output of any development project that requires design review, shall not exceed forty thousand lumens per acre, averaged over the entire project. A photometric study shall be submitted as part of the design review plan application. The photometric study shall show that no more than 0.2 footcandles are observed at the property line.
- Luminaries shall not exceed a height of twenty-four feet above finished grade. Except recreational facilities.
- Lighting Under Awnings, Canopies, and Similar Structures. Outdoor lighting under awnings, canopies, buildings, overhangs, or roof eaves shall be shielded so as to light pedestrian areas and walks and not illuminate the overhang, eave, or awning. Lighting fixtures in gasoline filling stations shall not extend below the ceiling plane(s) of such canopies.

Energy Conservation

- Where the power for exterior lighting is supplied through the energy service to the building, all exterior lighting, other than low-voltage landscape lighting, shall comply with the International Energy Conservation Code. Exception: Where approved because of historical, safety, signage or emergency considerations.
- All exterior building grounds luminaires that operate at greater than 100 watts

shall contain lamps having a minimum efficacy of under 60 lumens per watt unless the luminaire is controlled by a motion sensor or qualifies for an exception.

- The total exterior lighting power allowance for all exterior building applications is the sum of the base site allowance plus the individual allowances for areas that are to be illuminated. The lighting zone for the building exterior is determined by the attached table.
- Lighting used for the following exterior applications is exempt where equipped with a control device independent of the control of the nonexempt lighting:
 1. Specialized signal, directional and marker lighting associated with transportation;
 2. Advertising signage or directional signage;
 3. Integral to equipment or instrumentation and is installed by its manufacturer;
 4. Theatrical purposes, including performance, stage, film production and video production;
 5. Athletic playing areas;
 6. Temporary lighting;
 7. Industrial production, material handling, transportation sites and associated storage areas;
 8. Theme elements in theme/amusement parks; and

9. Used to highlight features of public monuments and registered historic landmark structures or buildings.
- Lighting not designated for dusk-to-dawn operation shall be controlled by either a combination of a photosensor and a time switch, or an astronomical time switch. Lighting designated for dusk-to-dawn operation shall be controlled by an astronomical time switch or photo sensor. All time switches shall be capable of retaining programming and the time setting during loss of power for a period of at least 10 hours.

Exterior Lighting Zones

Lighting Zone	Description
1	Developed areas of national parks, state parks, forest land, and rural areas.
2	Areas predominantly consisting of residential zoning, neighborhood business districts, light industrial with limited nighttime use and residential mixed use areas.
3	All other areas
4	High-activity commercial districts in major metropolitan areas as designated by the local land use planning authority.

INDIVIDUAL LIGHTING POWER ALLOWANCES FOR BUILDING EXTERIORS

		LIGHTING ZONES			
		Zone 1	Zone 2	Zone 3	Zone 4
Base Site Allowance (Base allowance is usable in tradable or nontradable surfaces.)		500 W	600 W	750 W	1300 W
Tradable Surfaces (Lighting power densities for uncovered parking areas, building grounds, building entrances and exits, canopies and overhangs and outdoor sales areas are tradable.)	Uncovered Parking Areas				
	Parking areas and drives	0.04 W/ft ²	0.06 W/ft ²	0.10 W/ft ²	0.13 W/ft ²
	Building Grounds				
	Walkways less than 10 feet wide	0.7 W/linear foot	0.7 W/linear foot	0.8 W/linear foot	1.0 W/linear foot
	Walkways 10 feet wide or greater, plaza areas special feature areas	0.14 W/ft ²	0.14 W/ft ²	0.16 W/ft ²	0.2 W/ft ²
	Stairways	0.75 W/ft ²	1.0 W/ft ²	1.0 W/ft ²	1.0 W/ft ²
	Pedestrian tunnels	0.15 W/ft ²	0.15 W/ft ²	0.2 W/ft ²	0.3 W/ft ²
	Building Entrances and Exits				
	Main entries	20 W/ft ² linear foot of door width	20 W/ft ² linear foot of door width	30 W/ft ² linear foot of door width	30 W/ft ² linear foot of door width
	Other doors	20 W/ft ² linear foot of door width	20 W/ft ² linear foot of door width	20 W/ft ² linear foot of door width	20 W/ft ² linear foot of door width
	Entry canopies	0.25 W/ft ²	0.25 W/ft ²	0.4 W/ft ²	0.4 W/ft ²
	Sales Canopies				
	Free-standing and attached	0.6 W/ft ²	0.6 W/ft ²	0.8 W/ft ²	1.0 W/ft ²
	Outdoor Sales				
	Open areas (including vehicle sales lots)	0.25 W/ft ²	0.25 W/ft ²	0.5 W/ft ²	0.7 W/ft ²
Street frontage for vehicle sales lots in addition to "open area" allowance	No allowance	10 W/ft ² linear foot	10 W/ft ² linear foot	30 W/ft ² linear foot	
Nontradable Surfaces (Lighting power density calculations for the following applications can be used only for the specific application and cannot be traded between surfaces or with other exterior lighting. The following allowances are in addition to any allowance otherwise permitted in the "Tradable Surfaces" section of this table.)	Building facades	No allowance	0.1 W/ft ² for each illuminated wall or surface or 2.5 W/ft ² linear foot for each illuminated wall or surface length	0.15 W/ft ² for each illuminated wall or surface or 3.75 W/ft ² linear foot for each illuminated wall or surface length	0.2 W/ft ² for each illuminated wall or surface or 5.0 W/ft ² linear foot for each illuminated wall or surface length
	Automated teller machines and night depositories	270 W per location plus 90 W per additional ATM per location	270 W per location plus 90 W per additional ATM per location	270 W per location plus 90 W per additional ATM per location	270 W per location plus 90 W per additional ATM per location
	Entrances and gatehouse inspection stations at guarded facilities	0.75 W/ft ² of covered and uncovered area	0.75 W/ft ² of covered and uncovered area	0.75 W/ft ² of covered and uncovered area	0.75 W/ft ² of covered and uncovered area
	Loading areas for law enforcement, fire, ambulance and other emergency service vehicles	0.5 W/ft ² of covered and uncovered area	0.5 W/ft ² of covered and uncovered area	0.5 W/ft ² of covered and uncovered area	0.5 W/ft ² of covered and uncovered area
	Drive-up windows/doors	400 W per drive-through	400 W per drive-through	400 W per drive-through	400 W per drive-through
	Parking near 24-hour retail entrances	800 W per main entry	800 W per main entry	800 W per main entry	800 W per main entry

For SI: 1 foot = 304.8 mm, 1 watt per square foot = W/0.0929 m².

BETTER LIGHTS FOR BETTER NIGHTS

Help eliminate light pollution. Select the best fixture for your application using this guide. Use the lowest wattage bulb appropriate for the task and turn off the light when it's not being used.

Unacceptable / Discouraged	Acceptable
Fixtures that produce glare and light trespass	Fixtures that shield the light source to minimize glare and light trespass and to facilitate better vision at night
 <p>Unshielded Floodlights or Poorly-shielded Floodlights</p>	 <p>Full Cutoff Fixtures</p> <p>Fully Shielded Walkway Bollards</p> <p>Fully Shielded Wallpack & Wall Mount Fixtures</p>
 <p>Unshielded Bollard</p> <p>Unshielded Wallpacks & Unshielded or Poorly-shielded Wall Mount Fixtures</p>	 <p>Fully Shielded Fixtures</p> <p>Fully Shielded Streetlight</p>
 <p>Drop-Lens & Sag-Lens Fixtures w/ exposed bulb / refractor lens</p> <p>Unshielded Streetlight</p>	 <p>Fully Shielded Security Light</p> <p>Fully Shielded 'Period' Style Fixtures</p>
 <p>Unshielded Security Light</p> <p>Unshielded 'Period' Style Fixtures</p> <p>Unshielded PAR Floodlights</p>	 <p>Fully Shielded Security Light</p> <p>Fully Shielded 'Period' Style Fixtures</p> <p>Flush Mounted Canopy Fixtures</p>
 <p>Drop-Lens Canopy Fixtures</p> <p>Shielded / Properly-aimed PAR Floodlights</p>	 <p>Flush Mounted Canopy Fixtures</p>

BC 9/03

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