

Chapter 17.132

DARK SKY

Sections:

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- 17.132.020 Definitions.
- 17.132.030 Criteria.
- 17.132.040 Notification.
- 17.132.050 The City's Role.
- 17.132.060 Violations, Legal Actions and Penalties.

17.132.010 General Provisions.

- A. **Title.** The ordinance codified in this Chapter together with the amendments codified in this Chapter, shall be known and may be cited as the Ketchum dark sky ordinance.
- B. **Purposes.** The general purpose of this Chapter is to protect and promote the public health, safety and welfare, the quality of life, and the ability to view the night sky, by establishing regulations and a process of review for exterior lighting. This Chapter establishes standards for exterior lighting in order to accomplish the following:
 - 1. To protect against direct glare and excessive lighting;
 - 2. To provide safe roadways for motorists, cyclists and pedestrians;
 - 3. To protect and reclaim the ability to view the night sky, and help preserve the quality of life and the tourist experience;
 - 4. To prevent light trespass in all areas of the City;
 - 5. To promote efficient and cost effective lighting;
 - 6. To ensure that sufficient lighting can be provided where needed to promote safety and security;
 - 7. To allow for flexibility in the style of lighting fixtures;
 - 8. To provide lighting guidelines;
 - 9. To provide assistance to property owners and occupants in bringing non-conforming lighting into conformance with this Chapter; and
 - 10. To work with other jurisdictions within Blaine County to meet the purposes of this Chapter.
- C. **Scope.** All exterior lighting installed after the effective date of the ordinance codified in this Chapter in any and all zoning districts in the City shall be in conformance with the requirements established by this Title and any other applicable ordinances. All existing lighting installed prior to the effective date of this Chapter in any and all zoning districts in the City shall be addressed as follows:
 - 1. All existing lighting located on a subject property that is part of an application for a City Planning Department design review, conditional use, or subdivision permit, or building permit is required to be brought into conformance with this Chapter. Conformity shall occur prior to issuance of certificate of occupancy, final inspection or final plat recordation, when applicable. For other permits, the

- applicant shall have a maximum of thirty (30) days from date of permit issuance to bring the lighting into conformance.
2. All existing exterior commercial lighting that is not in conformance with this Chapter shall be brought into conformance with this Chapter within twelve (12) months from the date of adoption of the ordinance codified in this Chapter, by June 30, 2000.
 3. All existing lighting that does not meet the requirement of Section 17.124.050, which states that "any parking, yard or building illumination in (any) zoning (district) shall be so directed as to protect adjacent properties from glare and direct lighting" is required to be brought into conformance with Section 17.124.050.
 4. All existing exterior residential lighting, not affected by Subsections C.1 and 3 above, that does not comply with this Chapter is required to be brought into conformance with this Chapter within two years from the date of adoption of the ordinance codified in this Chapter, by June 30, 2001.
 5. In the event of a discrepancy in applicable ordinances, the most restrictive shall apply. (Ord. 743 § 1, 1999)

17.132.020 Definitions.

Unless specifically defined below, words or phrases used in this Chapter shall be interpreted so as to give them the meaning they have in common usage and to give this Section its most reasonable application.

"Area light" means light that produces over one thousand eight hundred (1,800) lumens (see Addendum 1, on file in the Ketchum Planning Department, for light output of various lamps). Area lights include, but are not limited to, street lights, parking lot lights and yard lights.

"Average footcandle" means the level of light measured at an average point of illumination between the brightest and darkest areas. The measurement can be made at the ground surface or at four to five feet above the ground.

"Ballast" means a device used with a discharge lamp to obtain the necessary voltage, current, and/or wave form for starting and operating the lamp.

"Building official" means the City of Ketchum Building Official.

"Bulb" means the source of electric light, to be distinguished from the whole assembly (see "Luminaire").

"Candela (cd)" means unit of luminous intensity.

"Commission" means the City of Ketchum Planning and Zoning Commission.

"Eighty-five (85) degree full cut-off type fixtures" means fixtures that do not allow light to escape above an eighty-five (85) degree angle measured from a vertical line from the center of the lamp extended to the ground (see Figure 2).

"Existing lighting" means any and all lighting installed prior to the effective date of the ordinance codified in this Chapter.

"Exterior lighting" means temporary or permanent lighting that is installed, located or used in such a manner to cause light rays to shine outside. Fixtures that are installed indoors that are intended to light something outside are considered exterior lighting for the intent of this Chapter.

"Fixture" means the assembly that holds the lamp in a lighting system. It includes the elements designed to give light output control, such as a reflector (mirror) or refractor (lens), the ballast, housing, and the attachment parts.

"Flood light" means light that produces up to one thousand eight hundred (1,800) lumens (see Addendum 1, attached to the ordinance codified in this Chapter, for light output of various lamps) and is designed to flood a well-defined area with light. Generally, flood lights produce from one thousand (1,000) to one thousand eight hundred (1,800) lumens.

"Flux (radiant flux)" means unit is erg/sec or watts.

"Footcandle" means illuminance produced on a surface one foot from a uniform point source of one candela, measured by a light meter.

"Full cut-off fixtures" means fixtures, as installed, that are designed or shielded in such a manner that all light rays emitted by the fixture, either directly from the lamps or indirectly from the fixture, are projected below a horizontal plane running through the lowest point on the fixture where light is emitted (see Figure 1).

"Glare" means intense light that results in discomfort and/or a reduction of visual performance and visibility.

"Holiday lighting" means festoon type lights, limited to small individual bulbs on a string, where the spacing of bulbs is not closer than three inches and where the output per bulb is no greater than fifteen (15) lumens.

"Illuminance" means density of luminous flux incident on a surface. Unit is footcandle or lux.

"Illuminating Engineering Society of North America (IES or IESNA)" means the professional society of lighting engineers, including those from manufacturing companies, and others professionally involved in lighting.

"Lamp" means the source of electric light: the bulb and its housing. To be distinguished from the whole assembly (see "Luminaire").

"Light" means the form of radiant energy acting on the retina of the eye to make sight possible; brightness, illumination, a lamp, as defined above.

"Light pollution" means any adverse effect of manmade light including, but not limited to, light trespass, uplighting, the uncomfortable distraction to the eye, or any manmade light that diminishes the ability to view the night sky; often used to denote urban sky glow.

"Light trespass" means light falling where it is not wanted or needed, generally caused by a light on a property that shines onto the property of others.

"Lighting" means any or all parts of a luminaire that function to produce light.

"Lumen" means unit of luminous flux; the flux emitted within a unit solid angle by a point source with a uniform luminous intensity of one candela. One footcandle is one lumen per square foot. One lux is one lumen per square meter.

"Luminaire" means the complete lighting unit, including the lamp, the fixture, and other parts.

"**Luminance**" means at a point and in a given direction, the luminous intensity in the given direction produced by an element of the surface surrounding the point divided by the area of the projection of the element on a plane perpendicular to the given direction. Units: candelas per unit area. The "luminance" is the perceived brightness that we see, the visual effect of the illuminance, reflected, emitted or transmitted from a surface.

"**Non-essential**" means lighting that is not necessary for an intended purpose after the purpose has been served. Does not include any lighting used for safety and/or public circulation purposes. Example: For purposes of this Chapter, lighting for a business sign is considered essential during business hours, however, is considered non-essential once the business is closed.

"**Partially shielded**" means the bulb of the fixture is shielded by a translucent siding and the bulb is not visible at all. Light may be emitted at the horizontal level of the bulb (see Figure 3).

"**Planning and zoning administrator**" means the City of Ketchum Planning and Zoning Administrator or a member of the City of Ketchum Planning Department Staff.

"**Recessed**" means when a light is built into a structure or portion of a structure such that the light is fully cut-off and no part of the light extends or protrudes beyond the underside of a structure or portion of a structure.

"**Shielded**" means when the light emitted from the fixture is projected below a horizontal plane running through the lowest point of the fixture where light is emitted. The bulb is not visible with a shielded light fixture, and no light is emitted from the sides of the fixture. Also considered a full cut-off fixture (see Figure 4).

"**Temporary lighting**" means lighting that is intended to be used for a special event for seven days or less.

"**Uplighting**" means lighting that is directed in such a manner as to shine light rays above the horizontal plane. (Ord. 743 § 2, 1999)

17.132.030 Criteria.

The Commission, the Building Official and/or the Planning and Zoning Administrator shall have the authority to require new lighting, and existing lighting pursuant to Section 17.132.010.C.1, to meet the recommendations and guidelines, in addition to the requirements, of this Chapter.

- A. All applications for design review, conditional use, subdivision and/or building permits shall include lighting plans showing location, type, height and lumen output of all proposed and existing fixtures. The applicant shall provide enough information to verify that lighting conforms to the provisions of this Chapter. The Planning and Zoning Administrator, Commission and/or Building Official shall have the authority to request additional information in order to achieve the purposes of this Chapter.
- B. All exterior lighting shall be full cut-off fixtures with the light source fully shielded, with the following exceptions:
 1. Luminaires that have a maximum output of two hundred sixty (260) lumens per fixture, regardless of number of bulbs (equal to one twenty [20] watt incandescent light), may be left unshielded provided the fixture has an opaque top to keep light from shining directly up (see Figure 5).

2. Luminaires that have a maximum output of one thousand (1,000) lumens per fixture, regardless of number of bulbs (equal to one sixty [60] watt incandescent light) may be partially shielded provided the bulb is not visible, and the fixture has an opaque top to keep light from shining directly up (see Figure 3).
 3. Flood lights with external shielding may be angled provided that no light escapes above a twenty-five (25) degree angle measured from the vertical line from the center of the light extended to the ground, and only if the light does not cause glare or light to shine on adjacent property or public rights-of-way (see Figure 6). Flood lights with directional shielding are encouraged (see Figure 7). Photocells with timers that allow a flood light to go on at dusk and off by eleven p.m. are encouraged.
 4. Holiday lights as defined in Section 17.132.020 are exempt from the requirements of this Chapter for the six and one-half month period from November 1st to April 15th, except that flashing holiday lights are prohibited on commercial properties. Flashing holiday lights on residential properties are discouraged. Holiday lights are encouraged to be turned off after bedtime and after close of businesses.
 5. Sensor activated lighting may be unshielded provided it is located in such a manner as to prevent direct glare and lighting into properties of others or into a public right-of-way, and provided the light is set to only go on when activated and to go off within five minutes after activation has ceased, and the light shall not be triggered by activity off the property.
 6. Vehicular lights and all temporary emergency lighting needed by the Fire and Police Departments, or other emergency services shall be exempt from the requirements of this Chapter.
- C. Light Trespass.** It is the intent of this Chapter to eliminate and prevent light trespass through the proper installation of lighting fixtures. All existing and/or new exterior lighting shall not cause light trespass and shall be such as to protect adjacent properties from glare and excessive lighting.
- D. IESNA Guidelines.** The Commission may require that any new lighting or existing lighting that comes before them meet the standards for footcandle output as established by IESNA.
- E.** All non-essential exterior commercial and residential lighting is encouraged to be turned off after business hours and/or when not in use. Lights on a timer are encouraged. Sensor activated lights are encouraged to replace existing lighting that is desired for security purposes.
- F. Area Lights.** All area lights, including street lights and parking area lighting, shall be full cut-off fixtures and are encouraged to be eighty-five (85) degree full cut-off type fixtures. Street lights shall be in accordance with the Idaho Power franchise agreement and/or the light conformance schedule adopted by resolution by the City Council. Street lights shall be high pressure sodium, low pressure sodium or metal halide, unless otherwise determined by the Council that another type is more efficient. Street lights along residential streets shall be limited to a seventy (70) watt high pressure sodium (hps) light. Street lights along non-

residential streets or at intersections shall be limited to one hundred (100) watts hps, except that lights at major intersections on state highways shall be limited to two hundred (200) watts hps. If the Council permits a light type other than high pressure sodium, then the equivalent output shall be the limit for the other light type (see Addendum 1, on file in the Ketchum Planning Department). For example: a one hundred (100) watt high pressure sodium lamp has a roughly equivalent output as a fifty-five (55) watt low pressure sodium lamp, or a one hundred (100) watt metal halide lamp.

Parking area lights are encouraged to be greater in number, lower in height and lower in light level, as opposed to fewer in number, higher in height and higher in light level. Parking lot lighting shall not exceed IESNA recommended footcandle levels.

All freestanding area lights within a residential zone, except street lights, shall be mounted at a height equal to or less than the value $3 + (D/3)$, where D is the distance in feet to the nearest property boundary.

- G. Luminaire Mounting Height.** Freestanding luminaires shall be no higher than twenty-five (25) feet above the stand/pole base, except that luminaires used for playing fields shall be exempt from the height restriction provided all other provisions of this Chapter are met and the light is used only while the field is in use, and except that street lights used on major roads may exceed this standard if necessary as determined by the City Council, as advised by a lighting engineer. Building mounted luminaires shall be attached only to walls, and the top of the fixture shall not exceed the height of the parapet or roof, whichever is greater.
- H. Uplighting.** Uplighting is prohibited in all zoning districts, except in cases where the fixture is shielded by a roof overhang or similar structural shield from the sky and an Idaho licensed architect or engineer has stamped a prepared lighting plan that ensures that the light fixture(s) will not cause light to extend beyond the structural shield, and except as specifically permitted in this Chapter.
- I. Flag Poles.** Upward flagpole lighting is permitted for governmental flags only and provided that the maximum lumen output is one thousand three hundred (1,300) lumens. Flags are encouraged to be taken down at sunset to avoid the need for lighting.
- J. Service Stations.** The average footcandle lighting level for new and existing service stations is required to be no greater than thirty (30) footcandles, as set by the IESNA for urban service stations.
- K. Canopy Lights.** All lighting shall be recessed sufficiently so as to ensure that no light source is visible from or causes glare on public rights-of-way or adjacent property.
- L. Landscape Lighting.** Lighting of vegetation is discouraged and shall be in conformance with this Chapter. Uplighting is prohibited.
- M. Towers.** All radio, communication and navigation towers that require lights shall have dual lighting capabilities. For daytime, the white strobe light may be used, and for nighttime, only red lights shall be used.

- N. **Temporary Lighting.** Temporary lighting that conforms to the requirements of this Chapter shall be allowed. Non-conforming temporary exterior lighting may be permitted by the Planning and Zoning Administrator only after considering (1) the public and/or private benefits which will result from the temporary lighting; (2) any annoyance or safety problems that may result from the use of the temporary lighting; and (3) the duration of the temporary non-conforming lighting. The applicant shall submit a detailed description of the proposed temporary non-conforming lighting to the Planning and Zoning Administrator. The Administrator shall provide written notice of said request to owners of property immediately adjacent to the subject property. Said notice shall inform adjacent property owners they may comment on the request during a period of not less than ten (10) days after mailing of the notice and prior to final action on said request.
- O. **Neon Lights.** Neon lights are only permitted pursuant to the sign ordinance, Section 17.124.040.
- P. The attached figures and information sheets shall be incorporated into this Chapter as guidelines for the public and the City for use in meeting the intent of this Chapter. The figures and information sheets only serve as examples. The City does not endorse or discriminate against any manufacturer or company that may be shown, portrayed or mentioned by the examples. Additional information is provided at the Ketchum Planning Department. (Ord. 743 § 3, 1999)

17.132.040 Notification.

- A. The City Building and Planning Department permits shall include a statement asking whether the subject property of the proposed work includes any exterior lighting.
- B. Within thirty (30) days of the enactment of this Chapter, the Planning and Zoning Administrator shall send a copy of the dark sky ordinance with a cover letter to all local electricians and local electric suppliers listed in the local 1999 telephone books, as well as to the Ketchum/Sun Valley chamber of commerce. Within ninety (90) days (coincide with next available mailing), the Planning and Zoning Administrator shall send notice to all property owners on the Ketchum water/sewer mailing list. (Ord. 743 § 4, 1999)

17.132.050 The City's Role.

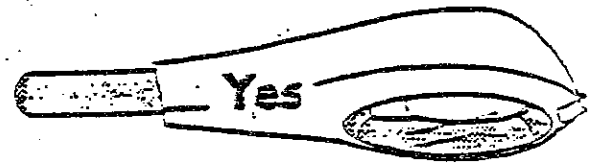
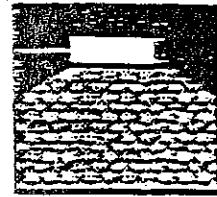
- A. The City will commit to changing all lighting within the City rights-of-way and on City-owned property to meet the requirements of this Chapter through the franchise agreement with the power company and/or through the light conformance schedule adopted by resolution by the Council.
- B. The City will assist property owners and/or occupants to correct any non-conforming lighting through consulting with the owner/occupant and assisting in the provision of shields. (Ord. 743 § 5, 1999)

17.132.060 Violations, Legal Actions and Penalties.

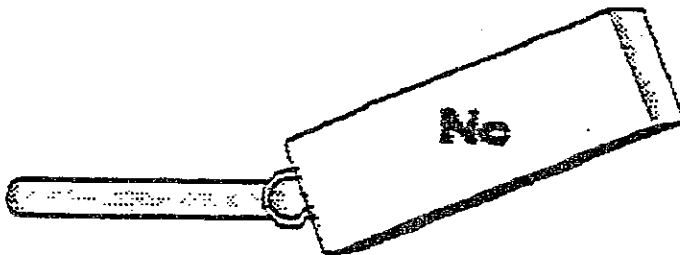
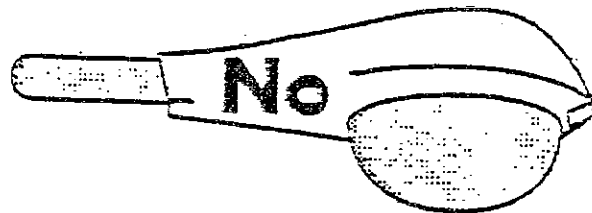
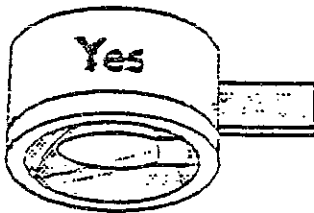
- A. Violations and Legal Actions.** If, after investigation, the Planning and Zoning Administrator finds that any provision of this Chapter is being violated, the Administrator shall give notice by hand delivery or by certified mail, return receipt requested, of such violation to the owner and/or to the occupant of such premises, demanding that the violation be abated within thirty (30) days of the date of hand delivery or of the date of mailing of the notice. The Planning Department Staff shall be available to assist in working with the violator to correct said violation. If the violation is not abated within the thirty (30) day period, the Administrator may institute actions and proceedings, either legal or equitable, to enjoin, restrain or abate any violations of this Chapter and to collect the penalties for such violations.
- B. Penalty.** A violation of this Chapter, or any provision thereof, shall be punishable by a civil penalty of one hundred dollars (\$100.00) and each day of violation after the expiration of the thirty (30) day period provided in Subsection A of this Section above, shall constitute a separate offense for the purpose of calculating the civil penalty. (Ord. 743 § 6, 1999)

Figure 1

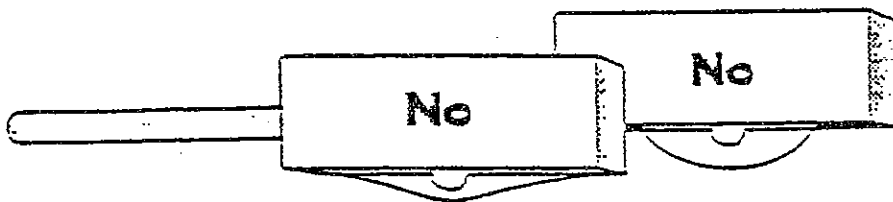
What is a True "Full Cutoff" Outdoor Lighting Fixture?



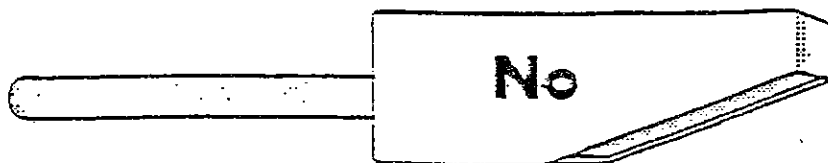
Flat glass lens, eliminates or minimizes direct glare, no upward throw of light. The housing for these fixtures is available in many styles.



Same fixture as above mounted incorrectly - defeating the horizontal mounting design. The fixture now produces direct glare, and can also produce uplight at steeper mounting angles.



Known as just "Cut-off." Center "drop" or "sag" lens with or without exposed bulb, produces direct glare.



Forward-Throw Style. Exposed bulb in the forward direction produces some direct glare.

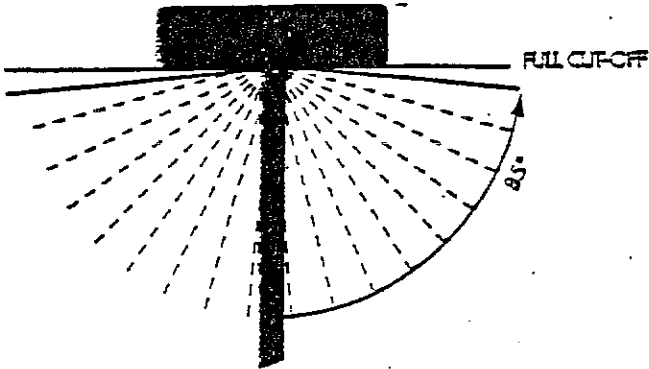


FIGURE 2
95° Full Cut-Off Fixture

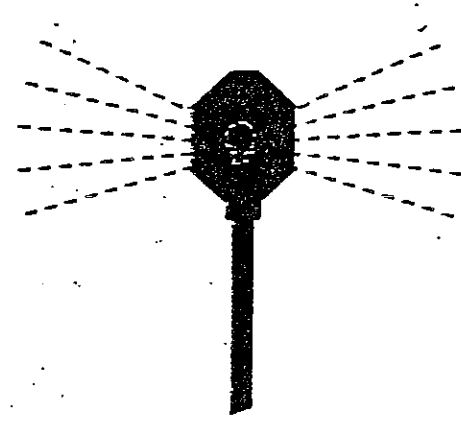


FIGURE 3
Partially Shielded
(translucent siding - bulb not visible)

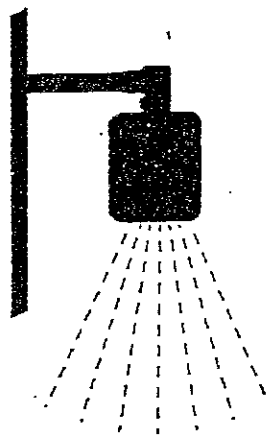


FIGURE 4
Shielded

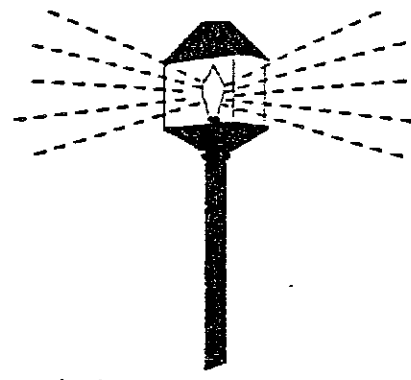


FIGURE 5
Unshielded with Opaque Top
(less than 250 lumens)

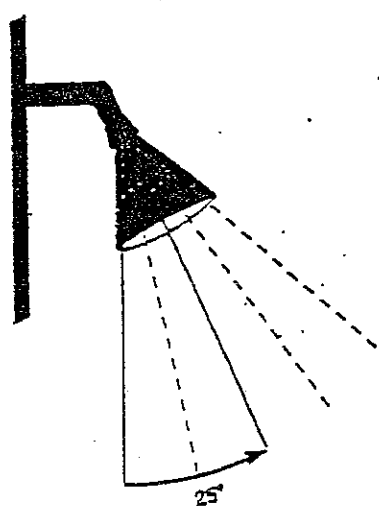


FIGURE 6
Angle of Flood Light
with External Shielding

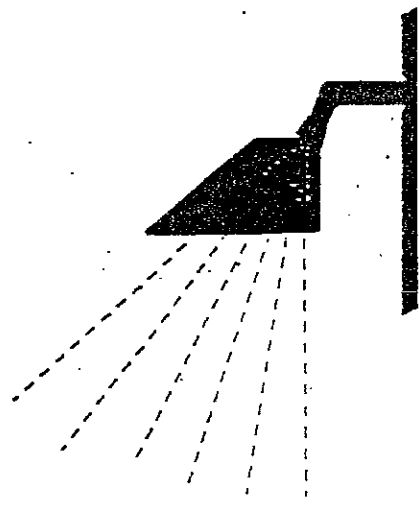
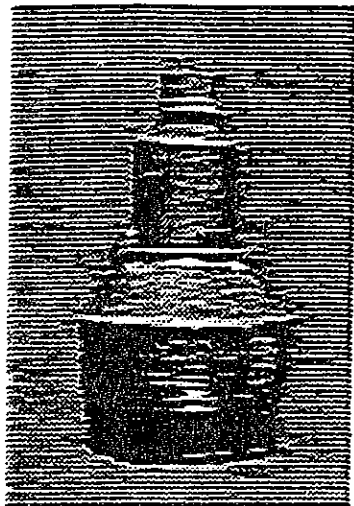


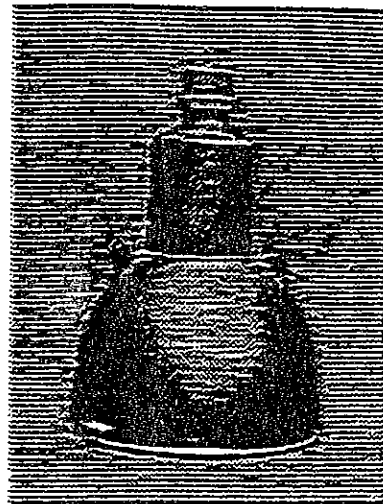
FIGURE 7
Directional Flood Light

Figure 8

NEMA Head Fixtures



Without Shield



With Shield

INITIAL RATED LIGHT OUTPUT OF VARIOUS LAMPS

(Information from Sylvania #PL-150, General Electric #9200 and Phillips #SG-100 large lamp catalogs)

LAMP TYPE	LAMP WATTAGE	INITIAL LUMEN OUTPUT
INCANDESCENT LAMP (FROSTED) (Syl.)	25	235
INCANDESCENT LAMP (FROSTED) (Syl.)	40	375
INCANDESCENT LAMP (FROSTED) (Syl.)	60	890
INCANDESCENT LAMP (FROSTED) (Syl.)	100	1690
INCANDESCENT LAMP (FROSTED) (Syl.)	150	2850
INCANDESCENT FLOOD OR SPOT (G.E.)	75	765
INCANDESCENT FLOOD OR SPOT (G.E.)	120	1500
INCANDESCENT FLOOD OR SPOT (G.E.)	150	2000
QUARTZ HALOGEN LAMP (FROSTED) (Syl.)	42	665
QUARTZ HALOGEN LAMP (FROSTED) (Syl.)	52	885
QUARTZ HALOGEN LAMP (FROSTED) (Syl.)	72	1300
QUARTZ HALOGEN LAMP (FROSTED) (Syl.)	300	6000
QUARTZ HALOGEN LAMP (FROSTED) (Syl.)	500	10500
QUARTZ HALOGEN LAMP (FROSTED) (Syl.)	1000	21000
QUARTZ HALOGEN MINI FLOOD OR SPOT (G.E.) (12 volt MR-16 type)	20	260
QUARTZ HALOGEN MINI FLOOD OR SPOT (G.E.) (12 volt MR-16 type)	42	630
QUARTZ HALOGEN MINI FLOOD OR SPOT (G.E.) (12 volt MR-16 type)	50	895
QUARTZ HALOGEN MINI FLOOD OR SPOT (G.E.) (12 volt MR-16 type)	75	1300
FLUORESCENT LAMP (Phillips)	7	400
FLUORESCENT LAMP (Phillips)	9	600
FLUORESCENT LAMP (Phillips)	13	900
FLUORESCENT LAMP (Phillips)	22	1200
FLUORESCENT LAMP (Phillips)	28	1600
FLUORESCENT LAMP (G.E. cool white)	40	3150
LOW PRESSURE SODIUM LAMP (Phillips)	18	1800
LOW PRESSURE SODIUM LAMP (Phillips)	35	4800
LOW PRESSURE SODIUM LAMP (Phillips)	55	8000
LOW PRESSURE SODIUM LAMP (Phillips)	90	13500
LOW PRESSURE SODIUM LAMP (Phillips)	135	22500
LOW PRESSURE SODIUM LAMP (Phillips)	180	33000
HIGH PRESSURE SODIUM LAMP (DIFFUSE) (G.E.)	35	2250
HIGH PRESSURE SODIUM LAMP (DIFFUSE) (G.E.)	50	4000
HIGH PRESSURE SODIUM LAMP (DIFFUSE) (G.E.)	70	6400
HIGH PRESSURE SODIUM LAMP (DIFFUSE) (G.E.)	100	9500
HIGH PRESSURE SODIUM LAMP (DIFFUSE) (G.E.)	150	16000
HIGH PRESSURE SODIUM LAMP (DIFFUSE) (G.E.)	250	27500
HIGH PRESSURE SODIUM LAMP (DIFFUSE) (G.E.)	400	50000
MERCURY VAPOR LAMP (WHITE DELUXE) (Syl.)	100	4500
MERCURY VAPOR LAMP (WHITE DELUXE) (Syl.)	175	8500
MERCURY VAPOR LAMP (WHITE DELUXE) (Syl.)	250	11100
MERCURY VAPOR LAMP (WHITE DELUXE) (Syl.)	400	20100
METAL HALIDE LAMP (Coated) (G.E.)	32	2500
METAL HALIDE LAMP (Coated) (Venture)	50	3400
METAL HALIDE LAMP (Coated) (G.E.)	100	9000
METAL HALIDE LAMP (Coated) (G.E.)	175	15750
METAL HALIDE LAMP (Coated) (G.E.)	250	20500
METAL HALIDE LAMP (Coated) (G.E.)	400	36000