

History of Street Lights in the United States Of America

The use of street lighting was first recorded in the Arab Empire from the 9th-10th centuries,[1] especially in Cordoba, then in London from 1417 when Sir Henry Barton, the mayor, ordered "lanterns with lights to be hanged out on the winter evenings between Hallowtide and Candlemasse." However it was introduced to the United States by famed inventor Benjamin Franklin, who was the postmaster of Philadelphia, Pennsylvania. Because of this, many regard Philadelphia as the birthplace of street lighting in the United States.

The colonial-era streetlights were lit by candles placed inside a glass vessel, which kept the candle from being blown out by wind. Franklin's design was four-sided, with four separate panes of glass, so that if one pane of glass was broken, the lamp did not need to be entirely replaced, and might not even blow out.

After the invention of gas light by William Murdoch in 1792, cities in Britain began to light their streets using gas. The United States followed suit shortly afterwards with the introduction of gas lighting to the streets of Baltimore in 1816. Throughout the nineteenth century, the use of gas lighting increased. Some locations in the United States still use gas lights; see Gas lighting.

After Edison pioneered electric use, light bulbs were developed for the streetlights as well. The first city to use electric street lights was Cleveland, Ohio in 1879[citation needed]. By the beginning of the 20th century, the number of fire-based streetlights were dwindling as developers were searching for safer and more effective ways to illuminate their streets. Fluorescent and incandescent lights became very popular during the 1930s and 1940s, when automobile travel began to flourish. A street with lights was referred to as a white way during the early 20th century; part of New York City's Broadway was nicknamed the Great White Way due to the massive number of electric lights used on theater marquees lining the street.

History of manufacturers

The two main competitors in the street lighting industry were General Electric and Westinghouse. During the 1950s, GE lit roadways with its Form 109 and, later, the wildly popular Form 400. Westinghouse answered with the OV-20 model.

In 1957, a new breed of streetlight fixture was introduced. These fixtures were called "cobraheads". If viewed from beneath they resembled a cobra's flared neck. Westinghouse dubbed its cobraheads the Silverliners, which remained in production over the next 25 years. The OV-25 remains a very popular and most-beloved streetlight fixture.

GE later came out with its own cobrahead, called the M400. The original M400 is noted for its pointed front end that protrudes over its bowl-shaped diffuser (also called a refractor). The M400 was the OV-25's main rival. They carried 250-400 watt bulbs, and therefore, were common on Interstate highways and city boulevards.

In 1964, Westinghouse produced an updated version of the OV-25, with a more rounded look. Only the diffuser was left unchanged.

In 1967, GE updated its M400. Gone was the protruding front end, and the new M400 was also more streamlined.

GE and Westinghouse also developed smaller fixtures. A miniature version of the M400 was made for suburban residential streets and alleys. That fixture was called the M250. In the same vein, Westinghouse offered three smaller Silverliners. The OV-12 (whose look resembles a miniature OV-50) came out in 1960, and it became the companion model to the Canadian-market OV-14B, which had been introduced in 1957. The OV-14B looks like a smaller version of the 1957-edition OV-25. Both the OV-12 and OV-14B were replaced by the OV-15 in 1965. These smaller fixtures carried 100-250 watt light bulbs.

The second-generation M400 and M250 were the first fixtures to sport the new sodium lights. The existing Silverliners could not handle these new lights, so Westinghouse had to develop a new OV-25, as well as a new OV-15. Both of these new Silverliners (also known as Tudors) now had a flat bottom, and weren't nearly as popular as the originals.

More new manufacturers entered the streetlighting industry. Thomas & Betts (also known as American Electric) developed two new fixtures, the Model 13 and Model 25. The Model 25 was later the basis for a larger lookalike, the Model 327. All three fixtures had a boxy look that usually sported grinning diffusers, a nod to the OV-15s and M250s. (Of the three fixtures, only the Model 327 is still in production.)

The Model 327, along with GE's M1000 and Westinghouse's OV-50, sported 700-1000 watt lights (see table).

Earlier versions of the M1000 and OV-50 (and, in very rare instances, the Model 327) are noted for having fins on top of the fixture. As newer ones were made, the fins were eliminated.

Some well-known light fixtures came from the Line Material Company. In the 1960s, during the height of the mercury lights' popularity, Line Material produced the Unistyle 400 and the smaller Unistyle 175. Both of these fixtures combined various characteristics of the Silverliners and GE M-series fixtures. When the sodium era began, the company produced the boxy, more simplified Unidoor 400 (for metropolitan expressways and city boulevards) and Unidoor 175 (for smaller residential streets and alleys).

In 1982, the entire Silverliner line was discontinued, when Cooper Lighting bought out Westinghouse's streetlighting division. Today, Cooper still makes the OV-50, now called the OVL. It also continues to manufacture the OV-15 and OV-25 models for sale in Canada.

GE and Cooper continued to take streetlighting to new heights. GE was a pioneer in the full-cutoff arena, when it created a spinoff of the popular M400. This fixture is noted for its pointed front end and lack of a diffuser. In addition, high-mast assemblies were developed for the light towers that were springing up along Interstate highways.

Thomas & Betts also created spinoffs of its Model 13 and 25. These new fixtures, called the 113 and 125, had a more-rounded look than their respective predecessors. They have become the most popular fixtures not manufactured by GE or Westinghouse.

In the mid-1980s, GE unveiled an updated M400, with a flat bottom reminiscent of the third-generation Silverliners. In 1997, the M400 underwent a total redesign, borrowing its styling from the Thomas & Betts Model 125.

Means of electric light generation

Arc lamp

Open Arc lamps were used in the late 19th & early 20th century by many large cities for street lighting. Their bright light required that the early arc lamps be placed on rather high (60 to 150-foot) towers; as such, they might be considered the predecessor to today's high-mast lighting systems seen along major highways. They were also widely used in film and stage. Arc lamps use high current between two electrodes (typically carbon rods) and require substantial maintenance. Arc lights have mainly been used where high lumen light was needed such as lighthouses. Today very few open arc lights are in still in operation, primarily in a few lighthouses and some industrial uses. The only remaining examples of original street lighting use are the moonlight tower of Austin, Texas.

A xenon lamp is a high pressure sealed arc lamp, and is in common usage today where extreme brightness in a relatively small space is required, typically in motion picture projectors in theaters, and stage and motion picture lighting. The sealed arc lamps do not suffer from the inefficiency and high maintenance problems of the original open arc lamps, however they are not well suited for most street lighting use.

Incandescent light

By far the most recognized type of lighting is the common household lightbulb utilizing a tungsten filament. These were the first low power electric lights in cities world wide. Some can still be found in streetlight service to this day. Others have been installed popular downtown areas of major cities to have a nostalgia effect. They were introduced some 20 years after open arc lamps, and in many cases replaced the higher maintenance arc lamps. Incandescent light also has excellent CRI rated at 100. Color temperature is generally around 2000-3200 K depending on the type of lamp. Incandescent light is also inefficient when compared to HID and gas discharge lighting such as Neon light.

Tungsten-halogen incandescent lights are considerably more efficient than regular incandescent lights, and are very commonly used in theatrical and motion picture lighting due to their higher efficiency and brightness and better color temperature characteristics. They are however little used in street lighting due to their relatively short lifespan.

Standard incandescent lamps are very commonly used in traffic signals, where they have not been replaced in recent years with LEDs.

Fluorescent lamp

The fluorescent lamp (a 4 foot tube) first became common in the late 1930s. These lamps are a form of discharge lamp where a small current causes a gas in the tube to glow. Their typical glow is strong in ultraviolet but weak in visible light. However the glass envelope is coated in a mixture of phosphors that are excited by the ultraviolet light and emit visible light. Fluorescent lamps are much more efficient than incandescent lamps, and for a short time became popular in street lighting both because of the efficiency and the novelty value. Fluorescent lamps for street lighting were first introduced to the public at the 1939 New York World's Fair.

The major problems with standard fluorescent lamps for street lighting is that they are large, and produce a diffuse nondirectional light. They are also rather fragile. Therefore the fixtures needed to be large, and could not be mounted more than 20-30 feet above the pavement if they were to produce an acceptable light level.

Fluorescent lamps quickly fell out of favor for main street lighting, but remained very popular for parking lot and outside building illumination for roadside establishments.

Mercury vapor

In 1948, the first regular production mercury vapor (MV) streetlight assembly was developed. It was deemed a major improvement over the old incandescent light, and shone much brighter than incandescent or fluorescent lights. Initially people disliked them because their bluish-green light made people look like they had the blood drained from them. Other disadvantages are that a significant portion of their light output is ultraviolet, and they "depreciate"; that is, they get steadily dimmer and dimmer with age while using the same amount of energy. Mercury lamps developed in the early/mid 1960s were coated with a special material made of phosphors inside the bulb to help correct the lack of orange/red light from MV lamps (increasing the CRI). The UV light excites the phosphorus producing a more "white" light (really producing some "reds" in the light spectrum). These are known as "color corrected" lamps. Most go by the "DX" designation on the lamp and have a white appearance to the bulb.

Effective in 2008, the sale of new MV streetlights and ballasts will be banned in the United States, although the sale of new bulbs for existing fixtures will continue. MV fixtures can be operated with MH ballasts, and are very likely to be rewired to these ballasts in the years to come. Also, in response to the ban, some older MV streetlights will most likely be modified to use either HPS or MH lamps in the near future, because they are known to last longer than newer luminaires.

Sodium vapor

Around 1970, a new streetlight was put into service: The high pressure sodium (HPS) light. It was initially disliked by most residents because of its orange glow, but the sodium vapor streetlight has since become the dominant type on American roadways and most people have become accustomed to the orange/yellow glow. It is by far the most efficient light source when compared to Mercury Vapor (MV) and Metal Halide (MH). Color Corrected Sodium Vapor Lights exist but are expensive. These "color corrected" HPS lamps have lower life and are less efficient.

There are two types of sodium vapor streetlights: high-pressure (HPS) and low-pressure (LPS). Of the two, HPS is the more-commonly used type, and it is found in many new streetlight fixtures. Sometimes,

older (pre-1970) fixtures may be retrofitted to use HPS lights as well. Virtually all fixtures that are converted to HPS have previously been lit with mercury vapor. Examples of retrofitted fixtures for HPS use include the GE Form 400 and the second-generation Westinghouse OV-25 Silverliner (although later versions of this model were available from the factory as HPS units).

HPS lamps have slightly different electrical requirements than do the older MV lamps. Both HPS and MV lamps require a transformer or ballast to change the voltage and regulate the current, however, HPS lamps also require an electrical "starter" circuit -- much like older fluorescent lamps in residential use. MV lamps do not require a separate "starter" circuit because they have a special starter element within the bulb used for striking the arc. MV lamps slowly dim over time, and a twenty-year-old lamp may emit a very pleasing, but useless, soft glow, rather than the powerful blue-white light of a new MV lamp. The yellow-spectrum HPS lamps also slowly dim over time but are known for "cycling," where the lamp cycles on and off when it has reached the end of its life cycle. When cycling, the arc within the lamp extinguishes and the lamp must cool down before the starter circuit initializes a new arc.

HPS lamps by and large have the same rated lifespan as do MV lamps, and they do give increased light and efficiency. At end of life MV lamps just become dimmer and sometimes color shifting towards the green end of the spectrum and continue to consume the same amount of electricity. HPS lamps begin to suffer end-of-life cycling before the amount of useful light becomes visibly diminished.

Metal halide

In recent years, Metal halide lamp (MH) streetlights have illuminated the roadways and parking lots. Metal halide has long been popular in business installations and can be found in warehouses, schools, hospitals and office buildings. Unlike the old mercury lights, metal halide casts a true white light. It is not nearly as popular as its sodium or mercury counterparts, as it is newer and less efficient than sodium.

Metal halide lights have also been used for retrofitting. Virtually all fixtures that are converted to metal halide have previously been lit with high-pressure sodium (HPS). Examples of retrofitted fixtures for metal halide use include the Thomas & Betts Model 25 and Model 327, as well as full-cutoff versions of GE's M400. MH lamps suffer color shift as they age though this has been improving. Actual life expectancy is about 10,000 to 12,000 hours on average. There has also been a noted issue with the lamps "exploding/shattering" during a failure. High cost and low life hours has kept them from becoming popular municipal lighting sources even though they have a much improved CRI around 85. Therefore, the use of metal halide is limited mainly to city and high end street lighting.

Induction Lamp

Induction is a newer type of light source that features extremely long lamp life (100,000 hours), energy efficiency, high color rendering index, and a color temperature close to incandescent lights. Philips makes their QL induction lamps in wattages of 55, 85 and 165. Sylvania offers their induction Iccetron in several varieties up to 150 watts. GE offers 100 watt induction as one of the light sources in their popular M400 cobrahead luminaire. US Lighting Tech has introduced a 250W street light. Street light fixtures using induction lamps are typically larger because of the large size of the lamp.

Induction lamps have a higher up front cost than other types, but because of the long lamp life, these lights are more and more appealing due to their low total cost of ownership. Some jurisdictions that use

induction fixtures for street lighting include Frederick, Maryland; Kensington, Maryland; Garrett Park, Maryland and Chevy Chase View, Maryland.

Compact fluorescent lamp

Compact fluorescent lamp/lighting (CFL) has been used more frequently as time has improved the quality of these lamps. These lamps have been used on municipal walkways and street lighting though they are still rare at this time. Improvements in reliability still need to be made. Some issues with them are high heat build up in the self contained ballast, low life/burnout due to frequent cycling (on/off) of the lamp, and the problem where most fluorescent sources become dimmer in cold weather (or fail to start at all). CFL efficiency is high and CRI is excellent around 85. CFL produces a color temperature around 3000 K with its light being "soft white" around that color temperature. Higher color temperatures are available.

Light emitting diodes (LEDs)

Light Emitting Diodes have virtually replaced both incandescent lamps and the occasional fluorescent lamp in traffic signal and crossing sign usage. They are rapidly developing in light output, color rendering, efficiency, and reliability. The cost of LED lighting is still extremely high compared to an incandescent lamp used for the same purpose, but the cost is decreasing rapidly. Even with the high per-unit cost, the increase in efficiency and increased lifespan make them very attractive for street lighting use; the reduced cost of electricity and maintenance in many cases can offset the increased cost of the lamp.

LEDs have not yet made any major inroads to general street, sidewalk, or parking lot illumination as their brightness does not yet compete well with HPS, MH, or CFL lighting. This will very likely change in the next 2-5 years, and then they will probably very rapidly replace most other forms of street lighting due to improved color rendering characteristics, and more importantly, a very large improvement in overall efficiency.

Optical types

Non-cutoff

The non-cutoff fixtures usually include the globe-shaped lamps that are mounted on top of lampposts. These lamps distribute their light in all directions. A major problem is created by the light pollution and glare, as they shoot their light upwards into trees and towards the sky rather than down towards the ground. Non-cutoff fixtures are rarely found on roadways because they tend to blind the driver.

Semicutoff

This is the most popular street lighting optic. The semicutoff fixtures usually refer to the cobraheads, but they can also apply to some lamppost-mounted fixtures that do not emit their light upwards. Most of the light can be emitted below 90 degrees, but as much as 5% of the light can also be emitted above 90 degrees. These fixtures do a very good job of spreading the light towards the ground but some uplight is possible, though not as serious as non-cutoff fixtures. Semicutoff fixtures are often mounted on tall poles. Examples of semicutoff optics include the bowl-shaped diffuser on GE's M400s made prior to 1997, and the prismatic one shared by the Westinghouse OV-25, Crouse-Hinds L250 and OVM, and

Cooper OVD. These fixtures are very commonly seen with both mercury vapor and HPS lamps (and sometimes metal halide as well).

Cutoff

These optics give more light control than semicutoffs. Less than 2.5% of the light can leave the fixture above 90 degrees. Cutoff fixtures have gained popularity in recent years, as they are available from manufacturers like GE and American Electric. The cutoff lights have a wider spread of light than full-cutoffs, and they generate less glare than semicutoffs. The cutoff lenses consist of a shallow curved glass (also called a sag lens) that is visible just below the lighting area on the fixture. As with the semicutoffs, these fixtures are very commonly seen with both mercury vapor and HPS lamps (and occasionally with metal halide as well).

Full-cutoff

These lights do not allow any of the light to escape the fixture above 90 degrees. Full-cutoffs distribute their light in a defined pattern, potentially providing more light on the ground at lower power consumption. In recent years, cutoff-type lights have gained popularity. Although full-cutoff fixtures generally use HPS lamps, some metal halide and even a few mercury vapor ones are known to exist.

Semicutoff Refractor Compatibilities

Small Fixtures (250 watts and under)

Round design: This refractor is shaped like a half-circle, and is usually found on fixtures operating at 150 watts and lower. Examples of round refractors include the ones used by the American Electric Models 113/115 and General Electric M250.

Flat design: This refractor uses a prismatic design, and has a flat bottom. It is most commonly found on fixtures operating between 100 and 250 watts. Examples of flat refractors include the ones used by the American Electric Models 113/115, Westinghouse OV-15, Crouse-Hinds L150 and OVS and Cooper OVX and OVZ.

Square design: This refractor is shaped like a square, but some newer incarnations may also have a slightly-rounded bottom. Examples of square refractors include the ones used by the General Electric M250, Line-Materials Unistyle 175, McGraw-Edison Unidoor 175/250, Crouse-Hinds L150 and OVS and Cooper OVX and OVZ.

All three refractor designs are compatible with any small fixture, except the Westinghouse OV-10, OV-12 and OV-14B (which share the same unique refractor design).

Medium Fixtures (150-400 watts)

Round design: This refractor is shaped like a half-circle. Usually found on General Electric M400s made prior to 1997, they are also used by the remote-ballasted GE Form 400 and Revere 400-watt models. Line-Materials/McGraw-Edison used a slightly-different round refractor design for the Unistyle 400 and Unidoor 400.

Prismatic designs: There are many different versions of the prismatic refractor design. A larger version of the flat design is used on the Westinghouse OV-25, Crouse-Hinds L250 and OVM and Cooper OVD. Another popular design features rounded-off corners, and is compatible with Thomas & Betts/American Electric Models 25, 125 and 325, as well as the 1997 and later editions of the General Electric M400.

The Unistyle 400/Unidoor 400 refractor is also interchangeable with the Model 25, and vice versa.

Large Fixtures (up to 1000 watts)

The Westinghouse OV-50/Cooper OVL refractor is used by the remote-ballasted Westinghouse OV-35 and Revere 1000-watt models, and although there has been very little-known evidence of this, the OV-50/OVL refractor is also interchangeable with the Thomas & Betts/American Electric Model 327, and vice versa.

The round refractor design as seen on the General Electric M1000 can also be used with the remote-ballasted GE Form 402.

Fixture type identification

Many streetlights are marked with stickers to aid workers in quickly identifying them. However, the "code" isn't that hard and can be read by anyone for fun, say on a long road trip.

The system is as follows: The color of the sticker indicates the type of light, the number is one tenth of the power in watts. More power roughly corresponds to a brighter light.

There are three exceptions to this rule:

A "17" sticker adds a five to the power rating, and therefore, the light is rated at 175 watts.

If a sticker reads "X1," it describes a 1000-watt light.

If a sticker reads "3," it describes a 35-watt light.

Sticker colors:

1. Blue: Mercury vapor
2. Red: Metal halide
3. Yellow: Sodium vapor

Frequently seen power ratings:

"3" sticker--35 watts (HPS)

"5" sticker--50/55 watts (HPS)

"7" sticker--70/75 watts (HPS)

"9" sticker--90 watts (LPS)

"10" sticker--100 watts (MV/HPS)

"13" sticker--135 watts (LPS)
"15" sticker--150 watts (HPS)
"17" sticker--175 watts (MH/MV)
"18" sticker--180 watts (LPS)
"20" sticker--200 watts (HPS/PSMH)
"25" sticker--250 watts (MV/MH/HPS)
"31" sticker--310 watts (HPS)
"32" sticker--320 watts (PSMH)
"35" sticker--350 watts (PSMH)
"40" sticker--400 watts (MV/MH/HPS)
"45" sticker--450 watts (PSMH)
"70" sticker--700 watts (MV)
"75" sticker--750 watts (PSMH/HPS)
"X1" sticker--1000/1500 watts (MV-H36 1000 W./MH/HPS)
"X2" sticker--2000 watts (MH)

List of streetlight manufacturers and fixtures

Fixture name (compatible wattages) Notes

Cooper/Crouse-Hinds

L150 (50-400 watts) Had two different-sized versions available. One was for 50-250 watts, the other (also referred to as the L250) used 200-400 watt lights. These luminaires retained the Westinghouse designations; OV-15 and OV-25, respectively.

OVC (50-250 watts) Same as the OVZ, but is used in the Canadian market.

OVD (150-400 watts) Semicutoff fixture. This fixture uses the same glass that also appears on the Westinghouse OV-25 Silverliner and Tudor, Crouse-Hinds L250 (aka the "big" L150) and OVM.

OVF (150-400 watts) Full-cutoff fixture.

OVG (50-250 watts) Cutoff fixture.

OVH (50-250 watts) Full-cutoff fixture.

OVL (700-1000 watts) Was originally the Westinghouse OV-50 Silverliner. It retains the same basic design of the OV-50, except it is now painted in a light grey finish (the standard color scheme for most

new luminaires manufactured after 1970). Cooper still uses the OV-50 designation for its Canadian versions.

OVM (150-400 watts) Replaced the "big" L150, predecessor to the OVX and OVD.

OVS (50-250 watts) Replaced the "small" L150, predecessor to the OVZ, though a few 35-watt versions exist in Canton and Westwood, Massachusetts

OVX (50-400 watts) Replacement for the OVM. Unlike the L150, the OVX is available in one size, and can take all light sizes.(except 1000 watt)

OVY (150-400 watts) Cutoff fixture.

OVZ (50-250 watts) Replacement for the OVS, though a few 35-watt versions exist in Canton and Westwood, Massachusetts

General Electric

Form 175 (100-250 watts) Predecessor to the M250. Had the strange cone shaped refractor. (Very Rare!)

Form 109 (250-400 watts) Predecessor to the Form 400.held 600 watt incandescent lamps of 400 watt mercury vapor lamps.made from 1948 to 1955.

Form 400 (250-400 watts) Replaced the Form 109, and predecessor to the M400.also made as the form 400 powerpack an iteragate ballast version of the form 400. made from 1956 to 1959.

Form 402 (700-1000 watts) Predecessor to the M1000.

Form 7980 Claw shaped fixture. Similar to the Boston Wheeler crescent moon heads.

Form 131VR Predecessor to the Form 79RV

Form 72 Predecessor to the Form 79 luminaire

Form 45113 Pendant or span wire mount luminaire for incandescent lamps (extremely rare!)

Form 110 luminaire "Compact" luminaire. uses mercury vapor lamps or incandescent lamps. Also includes photocell.

201-SA Current NEMA luminaire first introduced in the early to mid 1980s and redesigned in 1985.

M100 (100-175 watts) A full-cutoff companion to the M250, also believed to be the first such fixture.

M150 (50-250 watts) This PowrDoor luminaire, noted for its boxy profile, was introduced in 1980 as a companion to the M250A. In 1986, it was renamed the M250A2, and continues to use that designation today.

M250 (1959-1970)/M250R (1971-1985)/M250R2 (1986-present) (50-250 watts) Introduced in 1959, redesigned in 1971 (as the M250R) and 1986 (as the M250R2).

M250A (1967-1985)/M250A2 (1986-present) (50-250 watts) This PowrDoor luminaire was introduced in 1967 as the smaller companion to the M400A. It was redesigned in 1986 and renamed the M250A2.

M400 (1959-1970)/M400R2 (1986-1996)/M400R3 (1997-present) (150-400 watts) Introduced in 1959, this single-door luminaire was discontinued around 1970. From 1970 to 1986, the M-400 was virtually identical to the M-400A with the exception of having a non-vented door held in place with a simple spring latch. The ballast components were mounted on the top housing. In 1986, it was revived as the M400R2, with a Tudor-esque flat profile to distinguish it from the M400A2 PowrDoor. The current version (introduced in 1997 as the M400R3) looks similar to a Thomas/Betts 125 except for a slightly bulkier housing and a bail-type latch.

M400A (1967-1985)/M400A2 (1986-1996)/M400A3 (1997-present) (150-400 watts) This PowrDoor luminaire was introduced in 1967 as the larger companion to the M250A. Earlier versions had a vented door held in place with a more complex bail latch. A full-cutoff version of this luminaire was introduced in 1975. In 1986, it was renamed the M400A2 (this incarnation did not have the vented door of the earlier models), with the arrival of the single-door M400R2. The current version (introduced in 1997 as the M400A3) looks similar to a Thomas/Betts 325 except for a slightly bulkier housing and a bail-type latch.

M1000 (700-1000 watts) Introduced in 1959, adopted fins until the mid-1960s, was redesigned in 1978, and discontinued around 1987.

Hubbell

RM-series (50-250 watts) The smaller companion to the RL-series.

RL-series (200-400 watts) The larger companion to the RM-series, its look bears a resemblance to a Thomas & Betts Model 25.

RK-series (400-1000 watts) The largest of all Hubbell streetlights.

Joslyn Mfg. and Supply

MV111 (100-250 watts) Remote-ballasted fixture, the smaller companion to the MV131. The "MV" designation is said to stand for "Mercury Vapor," and the majority of all Joslyn luminaires still use mercury lights.

MV131 (250-400 watts) Remote-ballasted fixture, the larger companion to the MV111.

MV121 (100-250 watts) The smaller companion to the MV141. It looks like a spaceship with a refractor stuck underneath.

MV141 (250-400 watts) The larger companion to the MV121.

MV151 (400-1000 watts) The largest companion of all the Joslyn streetlamps.

Line Material Industries/McGraw-Edison

Ovalite (100-400 watts) Remote-ballasted fixture, in the tradition of the Westinghouse OV-10/20/35 and GE Form series. The earliest Ovalite had similar style as a GE Form 109 but later it was changed and was still called an Ovalite.

Unistyle 175/250 (100-250 watts) The smallest member of the Unistyle family.

Unistyle 400 (250-400 watts) Most people think of the 400 as the largest member of the Unistyle family, but in actuality, it's the mid-sized fixture.

Unistyle 1000 (700-1000 watts) This very rare fixture was the largest member of the Unistyle family.

Unidoor 175/250 (100-250 watts) Replaced the Unistyle 175/250.

Unidoor 400 (200-400 watts) Replaced the Unistyle 400

Spherolite (50-295 watts) Pendant type luminaire. Uses incandescent or mercury vapor lamps.

Suburbanaire (50-295 watts) "NEMA HEAD" style yard light for incandescent or mercury vapor lamps. Dates back to 1963

Dusk-To-Dawner (100, 175, & 250 watts) Dusk to dawn cobrahead security light for mercury vapor lamps.

ITT/Thomas & Betts/American Electric/American Electric Lighting(AEL)

Older version Model 13 (100-250 watts) Same as the boxier, bulkier looking Model 13 that would follow, but had a similar shape of a Model 113 and had more of a Silverliner appearance.

Model 13 (50-250 watts) The smaller companion to the Model 25. A Power Pad Door version of this luminaire was also available, and it was the immediate predecessor to the Model 313.

Model 25 (200-400 watts) The larger companion to the Model 13, and later inspired an even larger version. Usually painted light grey, although earlier versions of this luminaire also used the Silverliner color scheme.

Model 113 (50-250 watts) Replaced the Model 13. Has softer, more rounded lines than its predecessor. Its bodyshell resembles a more modernized version of the original Model 13, and it uses the grey color scheme.

Model 115 (50-250 watts) Replaced the Model 113. Two-bolt mast arm mount. Introduced in 2003 by Acuity Brands Lighting /American Electric. Some newer versions of this luminaire also use the silver color scheme.

Model 125 (150-400 watts) Replaced the Model 25. Has softer, more rounded lines than its predecessor. GE's M400 has used this design since 1997, but with some noticeable differences: The 125 has a slightly smaller housing than the M400 and an internal latch, as evidenced by its indented front end. Some newer versions of this luminaire (most notably in the Southeast) also use the silver color scheme.

Model 313 (50-250 watts) Power Pad Door.

Model 315 (50-250 watts) Replaced the Model 313. Two-bolt mast arm mount. Introduced in 2003 by Acuity Brands Lighting /American Electric. Some newer versions of this luminaire also use the silver color scheme.

Model 325 (150-400 watts) Power Pad Door. Current version looks like an M400 PowrDoor. Some newer versions of this luminaire also use the silver color scheme.

Model 327 (700-1000 watts) A spinoff of the Model 25, and as of this writing it is still in production.

Model 413 (50-250 watts) A semicutoff version of the Durastar 2000, and a companion model to the Models 115 and 315.

Durastar 2000 (50-250 watts) Full-cutoff fixture. (also has an option to use Sag lens)

Durastar 3000 (200-400 watts) Full-cutoff fixture. (also has an option to use Sag lens)

Lithonia Lighting

TDS2 Lithonia's model # for the Durastar 2000.

TDS3 Lithonia's model # for the Durastar 3000.

CHE Same as the American Electric Lighting Roadway 413 luminaire.

CHL Same as the AEL Roadway 115.

CHLD Same as the AEL Roadway 315.

CHM Same as the AEL Roadway 125.

CHMD Same as the AEL Roadway 325.

CHX Same as the AEL Roadway 327.

TMM Same as the AEL Multi-Mount 285.

TDR Same as the AEL Interstate II series 775.

TSL Same as the AEL Signlite 875.

Revere

Revere 400 (250-400 watts) Resembles a Westinghouse OV-25 Silverliner, but uses an M400-style refractor.

Revere 1000 (700-1000 watts) Resembles a Westinghouse OV-50 Silverliner, but with a shorter neck.

Westinghouse

AK-10 Incandescent gumball or deep bowl teardrop luminaire

OV-10 (100-250 watts) Predecessor to the OV-12.

OV-20 (250-400 watts) Predecessor to the OV-25.

HMA-60 (700-1000 watts) Companion model to the OV-20

OV-35 (700-1000 watts) Predecessor to the OV-50.

MO-8 (100-175 watts) A flat-bottomed Silverliner, believed to be the first-ever full-cutoff fixture. A more modernized version of its bodysell later appeared with the introduction of the OV-15 and OV-25 TuDor series.

OV-12 (100-250 watts) Replaced the OV-10, predecessor to the OV-15. Introduced in 1960. This fixture looks like a shrunken-down OV-50.

OV-14B (100-250 watts) Replaced the OV-10, predecessor to the OV-15. Introduced in 1957. It looks like a smaller version of the 1957 design of OV-25. Also those were mostly used in Canada when the United States had the OV-12 but the OV-14B can be found in the USA but is quite rare.

OV-15 (50-250 watts) Replaced the OV-12 and OV-14B as the smallest Silverliner. Introduced in 1965 and redesigned in 1979. The Crouse-Hinds L150 was originally designated as an OV-15. This fixture continues Canadian production as the Cooper OV-15.

OV-15 TuDor (50-250 watts) Introduced in 1970, this split-door luminaire featured a flatter profile and was designed to compete directly with the General Electric M250A Powr/Door luminaire.

OV-25 (250-400 watts) Mid-sized Silverliner, and the most popular streetlight fixture of all-time. Introduced in 1957, redesigned in 1964 and again in 1979. This is believed to be the first-ever integral-ballasted fixture. A remote-ballasted version was also available, with a truncated back as its most notable feature. The Crouse-Hinds L250 (or "big" L150) was originally designated as an OV-25. This fixture continues Canadian production as the Cooper OV-25.

OV-25 TuDor (250-400 watts) Introduced in 1970, this split-door luminaire featured a flatter profile and was designed to compete directly with the General Electric M400A Powr/Door luminaire.

OV-50 (700-1000 watts) The largest Silverliner, introduced in 1963. Adopted fins in the mid-1960s. This fixture continues U.S. production as the Cooper OVL, and it also continues Canadian production as the Cooper OV-50.

Note 1: Unistyle luminaires are known for their arched top and sloped front end, while their Unidoor successors have a boxy profile. The 175 designation is used for the smaller versions of both styles by most people, but some use the 250 designation, since they were capable of light sizes of up to 250 watts.

Note 2: Silverliner luminaires that have been rebuilt and painted light grey are referred to as "Greyliners"/"Grayliners." Usually, they include the single-door OV-15 and OV-25 Silverliners, and the OV-50 was also switched to a Greyliner scheme when Cooper Lighting bought out Westinghouse's streetlighting division in 1982. Its immediate successor, the Cooper OVL, is also considered to be a Greyliner. Although other Cooper/Crouse-Hinds luminaires, like the OVM/OVS and OVX/OVZ, use the grey color scheme, they are not referred to as Greyliners.

Note 3: It is also very common to reuse older luminaires with newer parts. The most common practice is retrofitting a normal MV luminaire to use HPS lamps. This is being done in most small towns and a few mid-sized cities because it is cheaper to rewire an existing fixture rather than buying completely new ones. Sometimes, normally-silver luminaires, like the 1959-era GE M250s/M400s and Line-Material Unistyles, are repainted light grey; the most common examples of these are the aforementioned Westinghouse Greyliners.

References

^ Fielding H. Garrison, History of Medicine:

"The Saracens themselves were the originators not only of algebra, chemistry, and geology, but of many of the so-called improvements or refinements of civilization, such as street lamps, window-panes, firework, stringed instruments, cultivated fruits, perfumes, spices, etc..."

^ S. P. Scott (1904), History of the Moorish Empire in Europe, 3 vols, J. B. Lippincott Company, Philadelphia and London.

F. B. Artz (1980), The Mind of the Middle Ages, Third edition revised, University of Chicago Press, pp 148-50.

(cf. References, 1001 Inventions)

External links

Streetlight Heaven Offers a history of fixtures made by GE, Westinghouse and others

Lighting-Gallery A website showing streetlights from US and beyond. Great for identifying streetlights.

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