

4 Lighting

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4.1 DOT-Approved Street-Lighting Combinations

Luminaires	Standard Poles			Optional Poles					Historic Poles		
	Davit	Octagonal	Round	Flatbush	Alliance	TBTA	WM	Fulton	Type M	Type F	Bishops Crook
Cobra Head	●	●	●				●				
Stad	●	●	●	●		●	●				
Fulton								●			
Alliance					●						
Helm	●	●	●	●		●	●				
Teardrop				●		●			●	●	●
Shielded Teardrop						●					

● This combination of an optional pole with the Teardrop or Shielded Teardrop luminaire creates a historic light

4.2 DOT-Approved Pedestrian-Lighting Combinations

Luminaires	Standard Poles			Optional Poles			Historic Poles	
	Davit	Octagonal	Round	TBTA	Fulton	Flushing Meadows	Type B	World's Fair
Cobra Head	●	●	●					
Stad	●	●	●	●				
Fulton					●			
Flushing Meadows						●		
Helm	●	●	●	●				
Teardrop				●				
Shielded Teardrop				●				
Type B							●	
World's Fair								●

● This combination of an optional pole with the Teardrop or Shielded Teardrop luminaire creates a historic light

Introduction

About this Chapter

This chapter outlines options for both new and replacement street lighting for use on New York City streets. Included are those fixtures that meet NYC DOT engineering standards, as well as technical requirements for safety and energy efficiency and for use in a variety of contexts.

Selection Criteria

Fixture types (luminaires) are categorized as Standard, Optional, Historic, and Pilot fixture types for both Street Lights and Pedestrian Lights (see detailed descriptions of these usage categories below). Only the fixtures that are described in the Standard category will be provided and maintained by NYC DOT. All other fixtures must be separately funded; and under certain conditions, will be maintained by NYC DOT. Where energy consumption and quantity of fixtures exceeds NYC DOT "Standard," a separate maintenance agreement will be required.

o Luminaires & Poles

The selection of lighting includes the specification of both a pole and luminaire. The desired aesthetic and engineering outcomes can be achieved by combining luminaires with different poles. Acceptable combinations are described in this chapter.

o Energy Guidelines

To comply with current citywide energy guidelines, most of the fixtures are available with 150W (watt) and 100W high pressure sodium (HPS) lamps. Energy costs that exceed the 150W standard and 100W standard must be separately funded. NYC DOT engineers will determine where the use of 150W or 100W is appropriate for the particular application.

o Engineering Review

In all cases, the suitability of the fixture type for particular street and lighting conditions must be approved by NYC DOT engineers.

Usage Categories

Standard

These luminaire and pole types will be provided and maintained by NYC DOT. The current standard luminaires for New York City streets are the 100W and 150W Cobra Head (for street lighting) and the 70W and 100W Cobra Head (for pedestrian lighting). For street lighting and pedestrian lighting, the standard pole types are the Davit, Round, and Octagonal poles. The M-2 Traffic Signal Pole is standard for use at all traffic signal locations.

Optional

These luminaires and poles require additional funding for the initial cost of the fixtures. In an effort to reduce carbon emissions citywide, the additional energy costs above the 150W (for street lighting) or 70W and 100W (for pedestrian lighting) standards will also require additional funding for all projects authorized after December 31, 2008.

Historic

Historic fixtures are intended for use in Landmark districts that are designated by the New York City Landmark Preservation Commission (LPC) or for neighborhoods that have substantial historic fabric intact. They will require special approval by NYC DOT and the Design Commission (DC) for use in other areas.

Most historic poles are currently used with only one luminaire, the 250W or 150W teardrop. Until alternate historic luminaires of lower wattage are available that meet NYC DOT technical requirements, this is the only option available.

Pilot

These luminaires are not yet approved for use in New York City. Many of them are currently or soon to be tested. They will require NYC DOT approval prior to specification for any project.

Specifications

For design criteria, technical information, finishes, and color specification, refer to *Bureau of Traffic Division of Streetlighting Specifications*. The latest edition is available from the NYC Department of Transportation.

Cutoff

Outdoor luminaires may be categorized according to the four classifications established by the IESNA of full cutoff, cutoff, semi-cutoff, and non-cutoff to distinguish the range in quantity of upward light and light above a horizontal plane emitted by a light source.

- **Full cutoff:** Full cutoff fixtures do not emit any upward light (at or above 90 degrees) and up to 10% of their light at or above 80 degrees. They create the narrowest spread of light.
- **Cutoff:** Cutoff fixtures emit up to 2.5% of their light upward (at or above 90 degrees) and up to 10% of their light at or above 80 degrees. They create a slightly wider spread of light.
- **Semi Cutoff:** Semi-cutoff fixtures emit up to 5% of their light upward (at or above 90 degrees), and up to 20% of their light at or above 80 degrees. They create a wider spread of light.
- **Non Cutoff:** Non-cutoff fixtures emit light in all directions. They create the widest spread of light.

Spacing/Typical

X:Y: The spacing of streetlights is dependant on several factors, including the height of the pole, street width, the amount of light the fixture provides, and the lighting levels necessary for the particular street classification. The information provided in this chapter is intended as a guideline to indicate that additional poles and/or fixtures may be required in the selection of certain luminaires.

The spacing between poles is described as a ratio in comparison to the Standard luminaire and pole (SLP), which is currently the Cobra Head luminaire on a round, octagonal, or davit pole. A ratio of 1:1 indicates that an equal number of poles and luminaires would be required for replacement. A ratio of ½:1 indicates twice as many luminaires and poles would be required to achieve similar lighting levels as the SLP.

Lighting Levels

Lighting levels are based on the guidelines established by the IESNA. All lighting designs must be reviewed and approved by NYC DOT engineers.

Notes and Symbols

HPS	High Pressure Sodium
LED	Light Emitting Diode
HDG	Hot Dipped Galvanized Steel
SLP	Standard Luminaire and Pole (cobra head on round, octagonal, or davit pole)
IESNA	Illuminating Engineering Society of North America
IESType	Pattern of light distribution defined by the Illuminating Engineering Society.
W	Watts
\$	Costs: Shown for each luminaire as a "\$" symbol, representing relative costs compared to the Standard Luminaire and Pole (SLP). Because actual costs are subject to change, a scale of one to five \$ symbols is used rather than specific monetary amounts.

Cobra Head

USAGE: STANDARD

The Cobra Head luminaire was originally introduced by the Westinghouse and General Electric companies in 1957 to accompany an aluminum post designed in 1958 by Donald Deskey and first installed in 1963. Additional poles were later introduced to support the Cobra Head luminaire: the Octagonal, Round, and Davit. The 100W and 150W Cobra Head luminaire are the current standard for New York City streets.

Applications

Streets or highways

Single or twin mounting

Lamping/Optics

100W HPS, 150W HPS

Medium Semi-Cutoff, IES Type 1 (100W HPS)

IES Type II (150W HPS)

Material/Color

H.D.G. Steel/silver (street)

Aluminum/silver (highway)

Cost Compared to SLP

Cobra Head is the SLP

Spacing/Typical

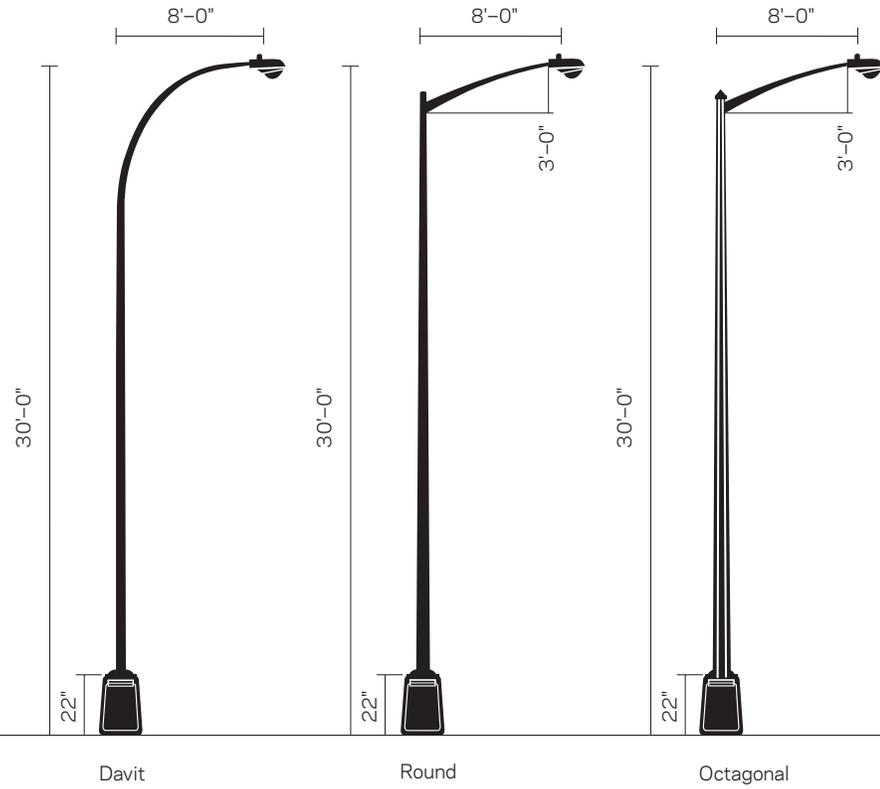
1: 1



Cobra Head luminaire and octagonal pole: Pearl Street, Manhattan

Cobra Head with Standard Poles

Poles shown here are the standard poles provided, tested, and maintained by NYC DOT.



Stad

USAGE: OPTIONAL

The Stad luminaire was introduced on the Robert F. Kennedy Bridge (formerly the Triboro Bridge). The design of the luminaire provides a contemporary option to the standard Cobra Head at an additional cost.

Applications

Commercial districts
Single or twin mounting

Lamping/Optics

100W HPS or 150W HPS
Cutoff or Semi-Cutoff, IES Type II or III

Material/Color

Aluminum/silver, black and green

Cost Compared to SLP

\$\$\$\$

Spacing/Typical

1: 1

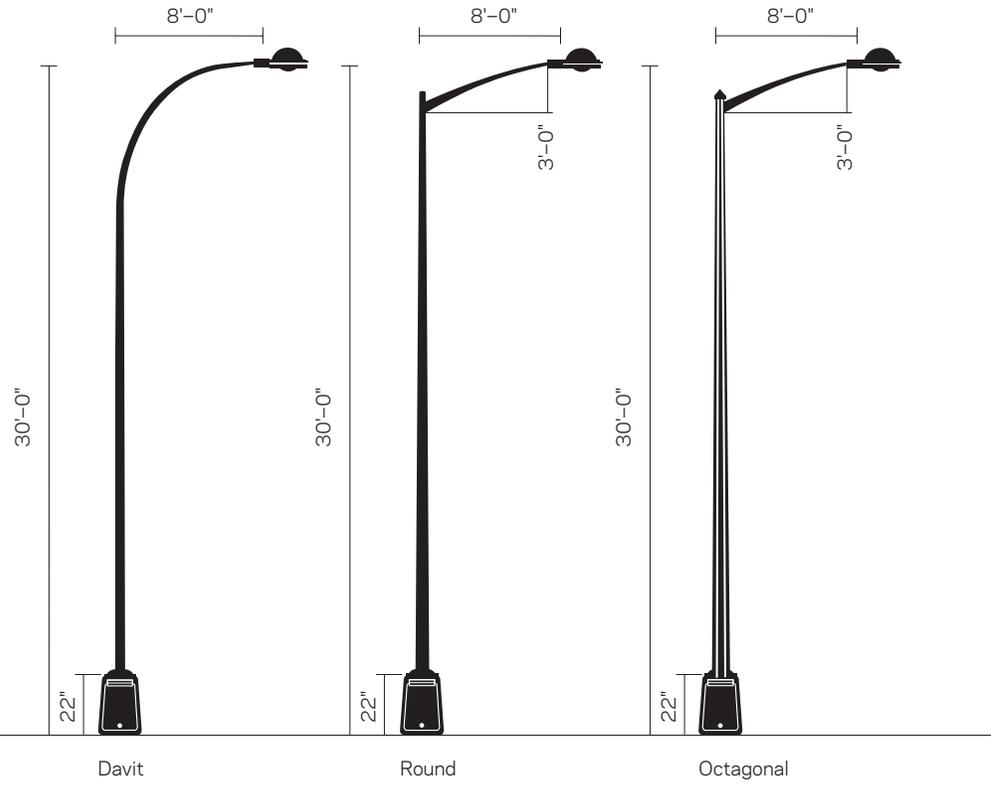


Stad luminaire TBTA pole: Robert F. Kennedy Bridge, Manhattan



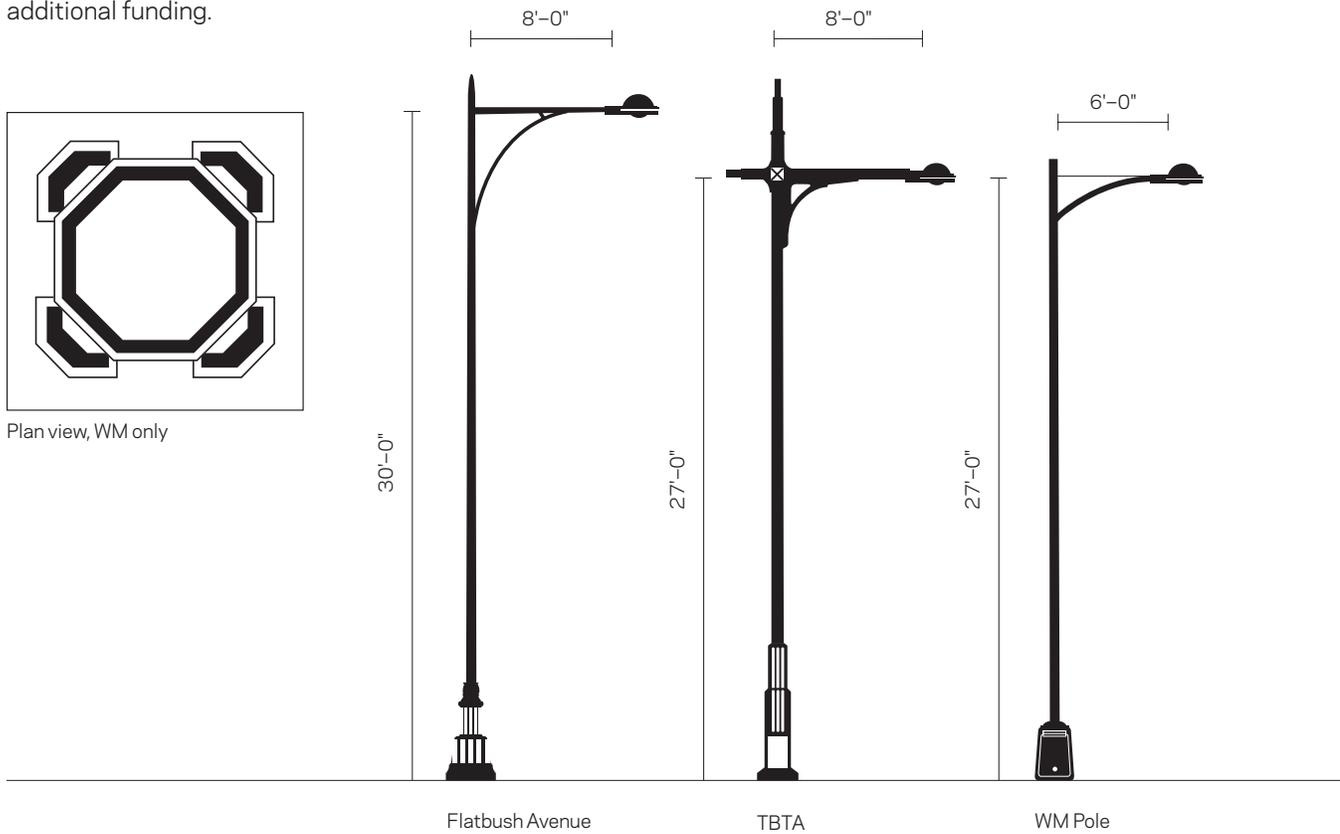
Stad with Standard Poles

Standard poles are provided and maintained by NYC DOT.



Stad with Optional Poles

Optional poles require additional funding.



Fulton

USAGE: OPTIONAL

The Fulton luminaire was selected for installation on the Fulton Street Mall in fall 2008. The design of the luminaire provides a contemporary option to the standard Cobra Head at an additional cost.

Applications

Commercial districts
 Roadway width of 36 feet or less

Lamping/Optics

100W HPS or 150W HPS
 Cutoff, IES Type II or III

Material/Color

Aluminum/silver

Cost Compared to Standard Light

\$\$\$\$

Spacing/Typical

¾: 1



Fulton luminaire and pole (Credit: Hess America)

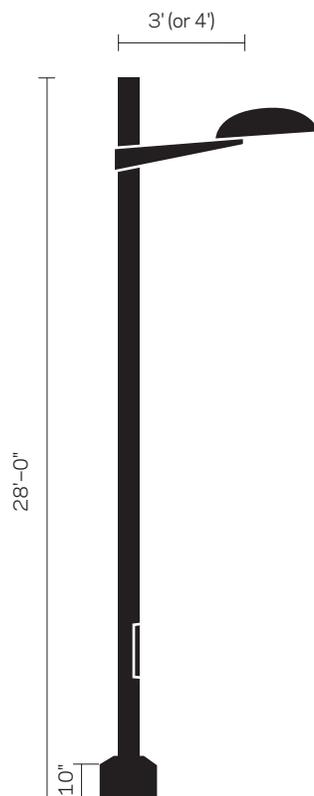


Fulton luminaire and pole (Credit: Hess America)



Fulton Luminaire and Pole

No standard NYC DOT pole options.



Fulton Head

Alliance

USAGE: OPTIONAL

The Alliance luminaire was originally introduced in the Lower Manhattan historic financial district by the Downtown Alliance business improvement district. The design of the luminaire provides a contemporary option to the standard Cobra Head at an additional cost.

Applications

- Commercial districts
- Roadways with width of 36 ft or more

Lamping/Optics

- 100W HPS, 150W HPS
- Cutoff, or semi-cutoff, IES Type II or III

Material/Color

- Steel/silver and black

Cost Compared to SLP

\$\$\$\$\$

Spacing/Typical

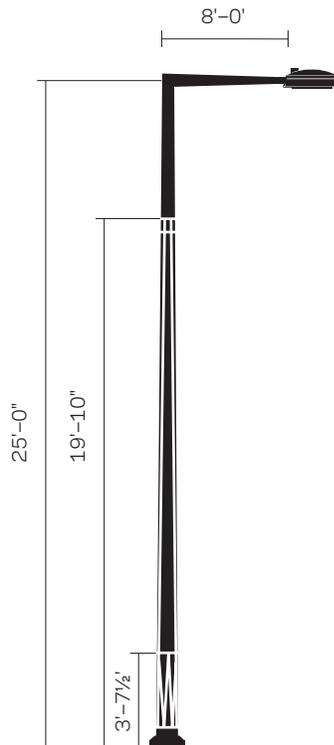
$\frac{2}{3}$: 1



Alliance luminaire and pole: Murray Street, Manhattan

Alliance Luminaire and Pole

No standard NYC DOT pole options.



Alliance



Helm

USAGE: OPTIONAL

The Helm luminaire was piloted by NYC DOT on Queens Boulevard in 2008. The design of the luminaire provides a contemporary option in place of the standard Cobra Head at an additional cost.

Applications

Commercial districts

Lamping/Optics

100W HPS or 150W HPS

Curved sag glass optics

Cutoff, or semi-cutoff, IES Type II or III

Material/Color

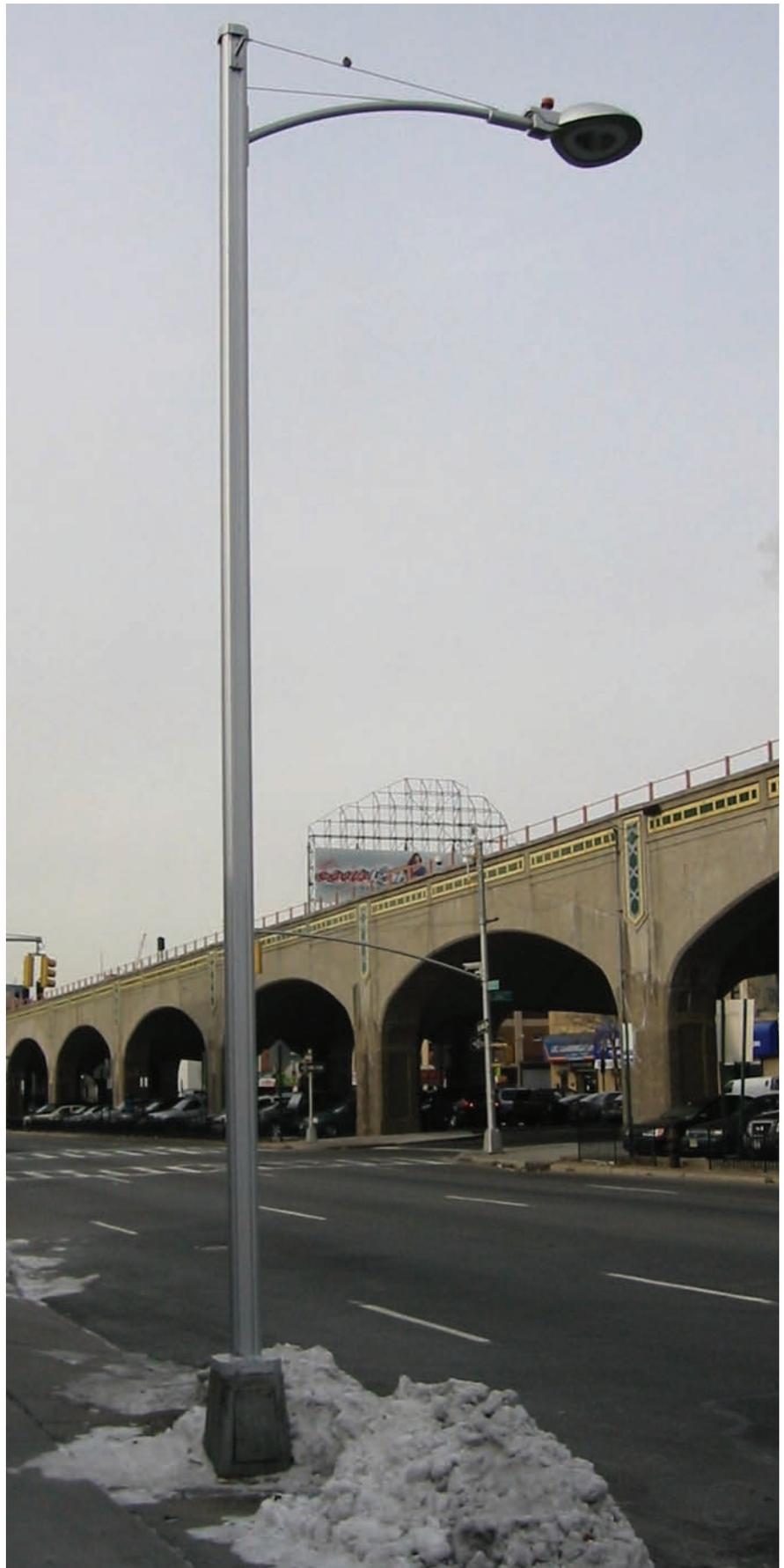
Aluminum/silver, black, brown and green

Cost Compared to SLP

\$\$\$\$\$

Spacing/Typical

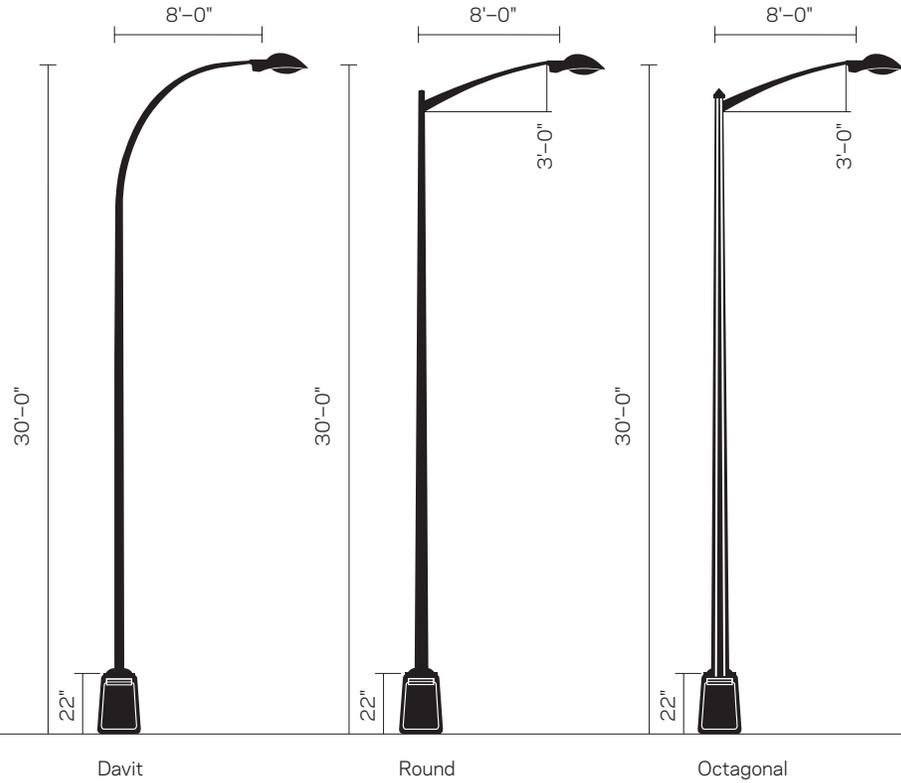
2/3: 1



Helm luminaire and WM pole: 39th Street, Queens

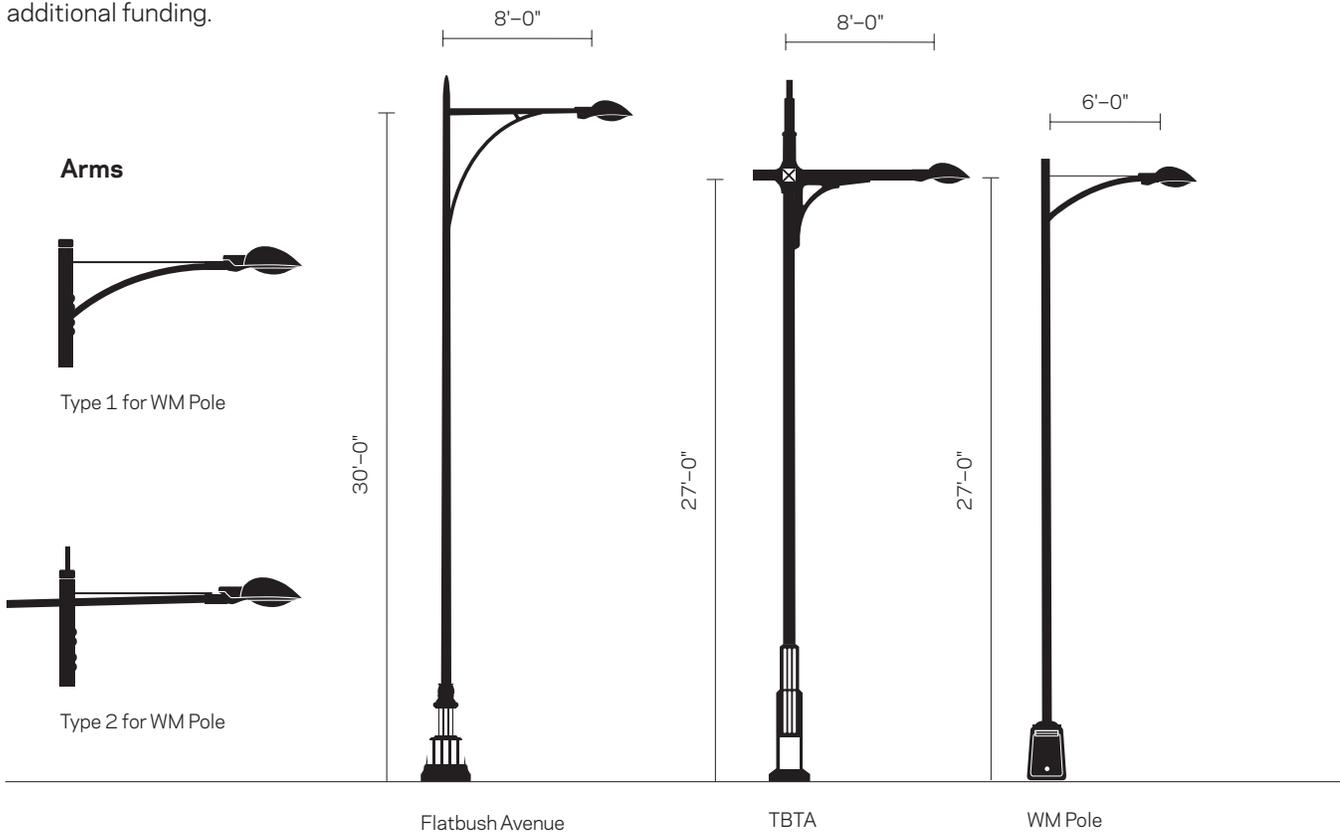
Helm with Standard Poles

Standard poles are provided and maintained by NYC DOT.



Helm with Optional Poles

Optional poles require additional funding.



Flatbush Avenue

USAGE: OPTIONAL

The Flatbush Avenue pole was installed in 1988 by the Economic Development Corporation on Flatbush Avenue in Brooklyn. The Flatbush Avenue pole can support both historic and optional luminaires.

Historic Luminaire with Flatbush Avenue Pole

Applications

Commercial and residential streets
 Streets with roadway width of 36 feet or more
 Single or twin mounting (center medians)

Lamping/Optics

Teardrop: Non-Cutoff, IES Type III or V (250W HPS)
 Shielded Teardrop: Cutoff, IES Type III or V (250W HPS)
 Stad or Helm: Cutoff or Semi-Cutoff, IES Type II or III (150W HPS)

Material/Color

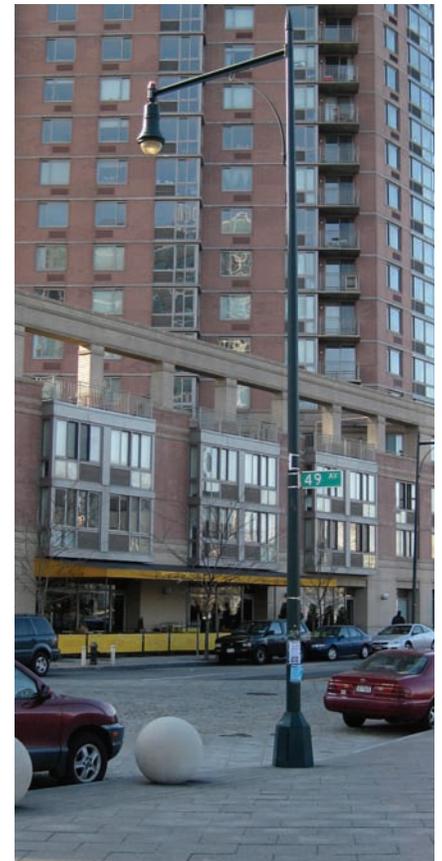
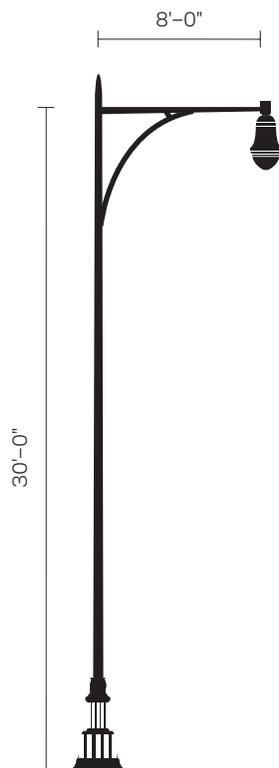
Fabricated steel pole/black, brown, and green

Cost Compared to SLP

\$\$

Spacing/Typical

Teardrop or Shield Teardrop: $\frac{2}{3}$: 1
 Stad: 1:1



Historic Teardrop luminaire and Flatbush pole: 49th Street, Queens



TBTA

USAGE: OPTIONAL

The TBTA (Triboro Bridge Tunnel Authority) was introduced in the 1950s and '60s for mid-twentieth-century bridge construction projects such as the Robert F. Kennedy Bridge (formerly the Triboro Bridge). The TBTA replaced wooden lamp posts which lit parkways during the 1920s and '30s. Today, the TBTA can support both historic and optional luminaires.

Applications

Commercial and residential streets

Single or twin mounting

Streets with roadway width of 36 feet or more

Lamping/Optics

Teardrop: Non-Cutoff, IES Type III or V (250W HPS)

Shielded Teardrop: Cutoff, IES Type III or V (250W HPS)

Stad: Cutoff or Semi-Cutoff, IES Type II or III (150W HPS)

Material/Color

Fabricated steel pole/black, brown and green

Cost Compared to SLP

\$\$\$\$\$

Spacing/Typical

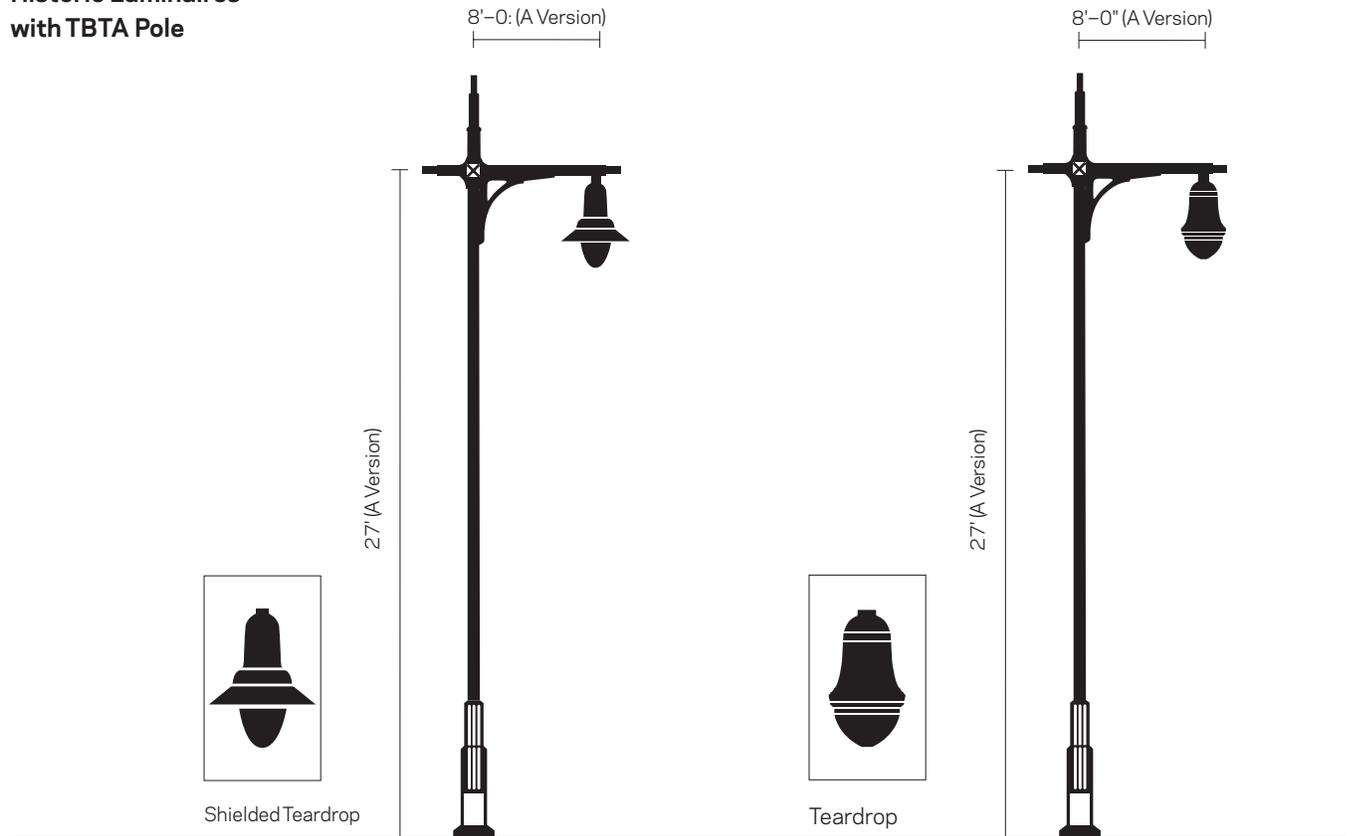
Teardrop or Shielded Teardrop: $\frac{2}{3}$: 1

Stad: 1: 1



Historic Shielded Teardrop luminaire and TBTA Pole: 40th Street, Manhattan

**Historic Luminaires
with TBTA Pole**



Type M

USAGE: HISTORIC

The Type M pole, originally known as the Mast-Arm post, was introduced in 1908 for wide streets at corners on Broadway north of Columbus Circle and on Seventh Avenue north of Central Park. Bracket versions of the Mast-Arm were also attached to the facades of buildings. The reproduction of the Mast-Arm was introduced in the late twentieth century as the Type M pole.

Applications

- Selected historic districts
- Streets with roadway width of 36 feet or more
- Single or twin mounting

Lamping/Optics

- Non Cutoff, IES Type III or V
- Teardrop luminaire, 250W HPS

Material/Color

- Ductile iron pole/black, brown and green

Cost Compared to SLP

\$\$\$\$\$

Spacing/Typical

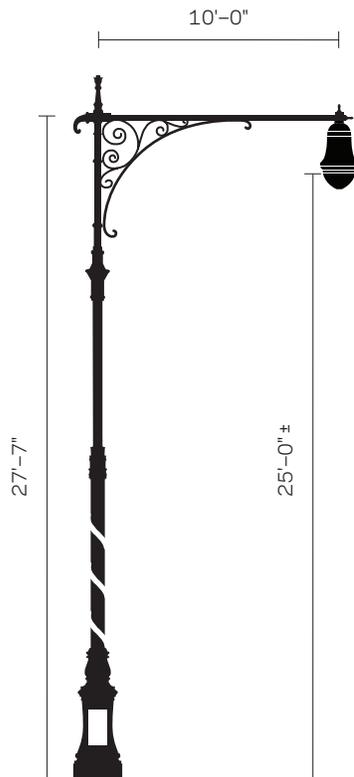
2/3: 1



Historic Teardrop luminaire and Type M pole: West 11th Street, Manhattan



Historic Luminaire with Type M Pole



Type F

USAGE: HISTORIC

The Type F pole, originally known as the Reverse Scroll Bracket, was developed in 1913 and installed on narrow streets downtown on Seventh Avenue. Bracket versions of the Reverse Scroll were also attached to the facades of buildings. The reproduction of the Reverse Scroll was introduced in the late twentieth century as the Type F pole.

Applications

- Selected historic districts
- Streets with roadway width of 36 feet or less
- Single or twin mounting

Lamping/Optics

- Non-Cutoff, IES Type III or V
- Teardrop luminaire, 250W HPS

Material/Color

- Ductile iron pole/black, brown, and green

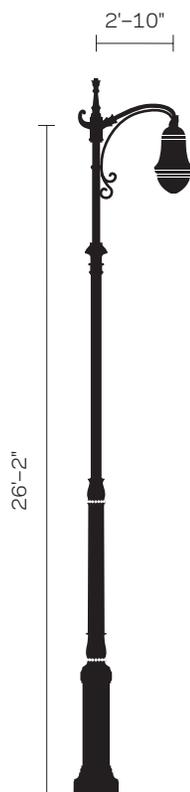
Cost Compared to SLP

\$\$\$\$\$

Spacing/Typical

1/2: 1

Historic Luminaire with Type F Pole



Historic Teardrop luminaire and Type F pole: East 8th Street, Manhattan



Bishops Crook

USAGE: HISTORIC

The Bishops Crook was the first of a number of decorative street lights to be introduced as early as 1900 on narrow city streets. Bracket versions of the Bishops Crook were also attached to the facades of buildings. The reproduction of the Bishops Crook was introduced in 1980 at Madison Avenue and 50th Street outside the Helmsley Palace Hotel, which is known today as the New York Palace Hotel.

Applications

Selected historical districts
 Streets with roadway width of 36 feet or less

Lamping/Optics

Non-Cutoff, IES Type III or V
 Teardrop luminaire, 250W HPS

Material/Color

Ductile Iron pole/black, brown and green

Cost Compared to SLP

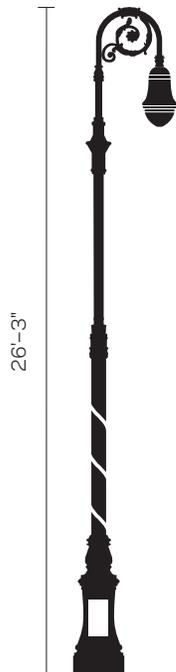
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Spacing/Typical

1/2: 1



Historic Teardrop luminaire and Bishops Crook pole: Nassau Street, Manhattan



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NYC DOT is no longer planning to pilot the Type L design

City Light

USAGE: PILOT

The City Light is not yet available for use, but is included in the Street Design Manual because it is undergoing engineering review. It is anticipated that the prototype of the light will be available for testing on city streets beginning Fall 2010. An international design competition to develop a new standard streetlight for New York City was held in 2004. The City Light design was selected as the winning entry. NYC DOT, the Office for Visual Interaction, and NYC DDC are working together to develop the proposed design into a luminaire.

Applications

Commercial or Residential districts
TBD

Lamping/Optics

LED

Material/Color

TBD

Cost Compared to SLP

TBD

Spacing/Typical

TBD



City Light pilot rendering



City Light pilot rendering

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NYC DOT is no longer planning to pilot the LED Type A design

LED Type E

USAGE: PILOT

The LED Type E luminaire is a rectangular design housing modular light bars. NYC DOT plans to pilot the luminaire in select locations.

Applications

Commercial or Residential districts
TBD

Parks, plazas, esplanades, pedestrian
bridges, walkways, and bikeways

Lamping/Optics

LED, full cutoff

Material/Color

TBD

Cost Compared to SLP

TBD

Spacing/Typical

TBD



LED Type E street light (Credit: Ruud Lighting)



LED Type E street light (Credit: Ruud Lighting)

Pedestrian Lighting

Cobra Head

USAGE: STANDARD

The Cobra Head luminaire was originally introduced by the Westinghouse and General Electric companies in 1957 to accompany an aluminum post designed in 1958 by Donald Deskey and first installed in 1963. Additional poles were later introduced to support the Cobra Head luminaire: the Octagonal, Round, and Davit. The 70W and 100W Cobra Head luminaires are the current standard for New York City pedestrian lighting.

Applications

Parks, esplanades, pedestrian bridges, walkways, ramps, under elevated trains and bikeways

Single mounting

Lamping/Optics

70W HPS, 100W HPS

Medium Semi-Cutoff, IES Type II

Material/Color

H.D.G. Steel/silver

Cost Compared to SLP

Cobra Head is the SLP

Spacing/typical

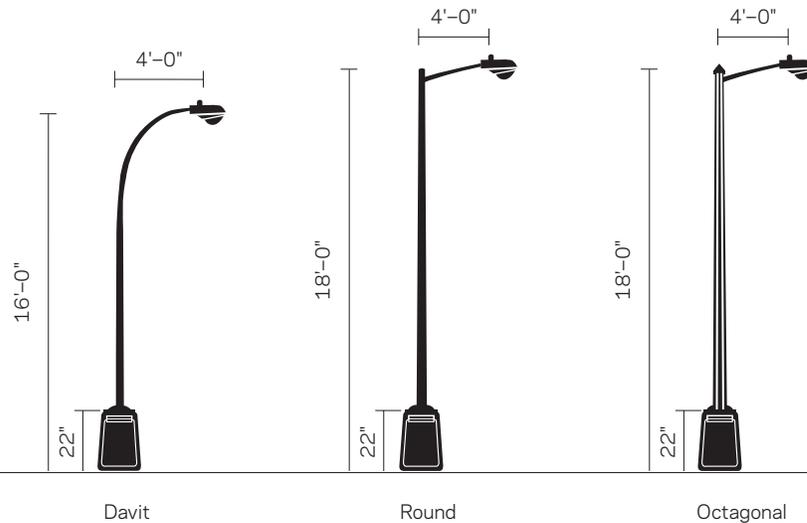
1: 1



Cobra Head luminaire: Manhattan Bridge, Manhattan



Cobra Head with Standard Poles



Stad

USAGE: OPTIONAL

The Stad luminaire was introduced on the Robert F. Kennedy Bridge in 2008. The design of the luminaire provides a contemporary option to the standard Cobra Head at an additional cost.

Applications

Parks, plazas, esplanades, pedestrian bridges, walkways, and bikeways

Lamping/Optics

70W HPS or 150W HPS

Sag or flat lens optics

Cutoff or Semi-Cutoff, IES Type II or III

Material/Color

Aluminum/silver, black and green

Cost Compared to SLP

\$\$\$\$

Spacing/Typical

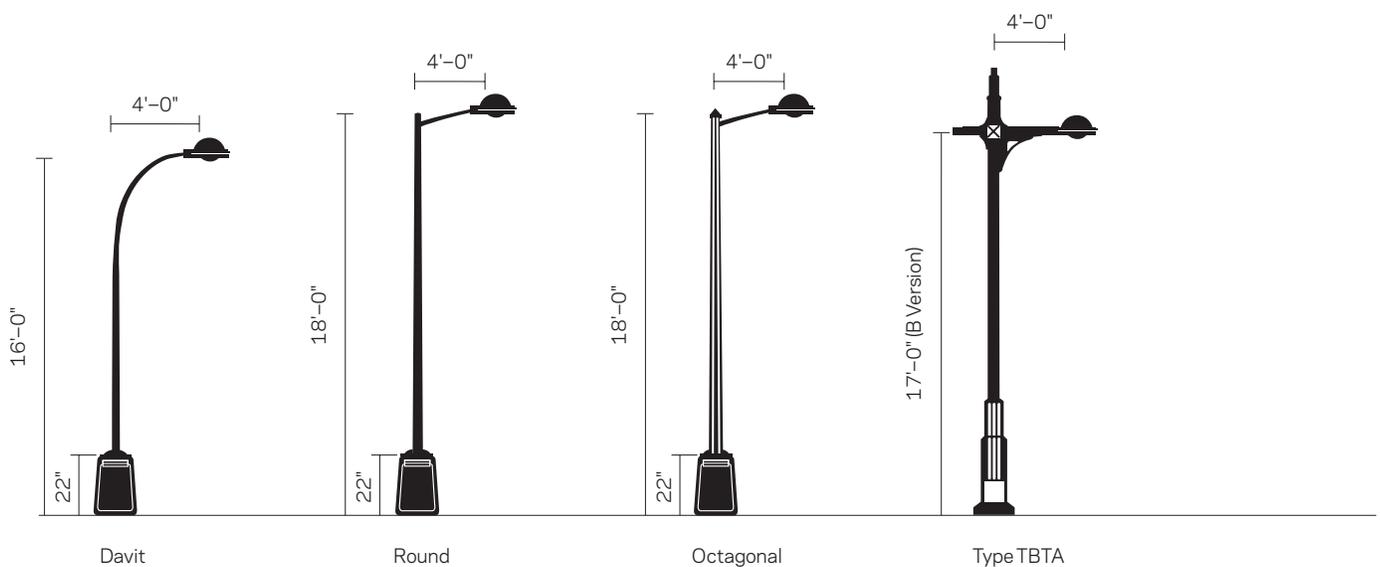
1: 1



Stad luminaire TBTA pole: Robert F. Kennedy Bridge, Manhattan



Stad with Standard Poles



Fulton

USAGE: OPTIONAL

The Fulton luminaire was selected for installation on the Fulton Street Mall in fall 2008. The design of the luminaire provides a contemporary option in place of the standard Cobra Head at an additional cost.

Applications

Parks, plazas, esplanades, pedestrian bridges, walkways, and bikeways

Lamping/Optics

70W HPS, 100W HPS

Cutoff, IES Type II or III

Material/Color

Aluminum/silver and black

Cost Compared to SLP

\$\$\$\$

Spacing/Typical

3/4: 1

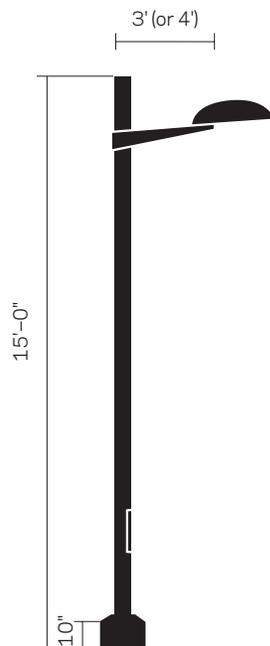


Fulton luminaire and pole (Credit: Hess America)



Fulton Luminaire and Pole

No standard NYC DOT pole options.



Fulton Head

Flushing Meadows

USAGE: OPTIONAL

The Flushing Meadows pole and luminaire was first installed in 2004 by the NYC Parks and Recreation Department in Canarsie Park in Brooklyn, NY. The pole is now installed in many city parks, plazas, and along walkways and bikeways.

Applications

Parks, plazas, esplanades, pedestrian bridges, walkways, and bikeways

Lamping/Optics

70W HPS, 100W or 150W HPS

Cutoff, IES Type III or V

Flushing Meadows Head

Material/Color

Fabricated steel/black, brown, green, and silver

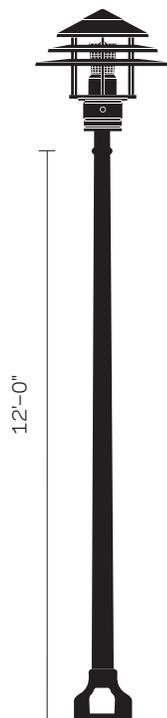
Cost Compared to SLP

\$\$

Spacing/Typical

$\frac{2}{3}$: 1

Flushing Meadows Pole & Luminaire



Flushing Meadows luminaire and pole: 46th Street, Queens



Type B

USAGE: HISTORIC

The Type B luminaire and pole was one of two street lights designed in the early 1900s for tungsten incandescent lamps. The Type B pole was first introduced in 1911 by designer Henry Bacon for the Central Park Mall and later installed in other city parks. The reproduction of the Type B pole was introduced in the late twentieth century. The pole is now installed in many city parks, in plazas, and along walkways and bikeways.

Applications

Parks, plazas, esplanades, pedestrian bridges, walkways, and bikeways

Lamping/Optics

150W HPS, 100W HPS

Non-Cutoff, IES Type V

Type "Riverside Park" luminaire

Material/Color

Ductile iron pole/black, brown, or green

Cost Compared to SLP

\$\$

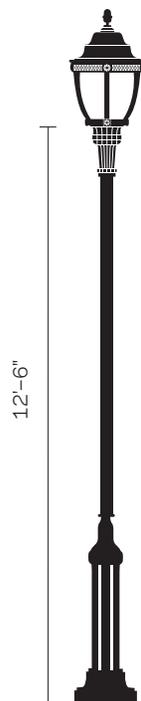
Spacing/Typical

$\frac{2}{3}$: 1



Type B luminaire and pole: Battery Place, Manhattan

Type B Luminaire & Pole



World's Fair

USAGE: HISTORIC

The World's Fair luminaire and pole was first installed in 1964 during the World's Fair held at Flushing Meadows Park in Queens. The pole is now installed in many city parks, in plazas, and along walkways and bikeways.

Applications

Parks, plazas, esplanades, pedestrian bridges, walkways, and bikeways

Lamping/Optics

100W HPS & 150W HPS

Non-Cutoff, IES Type V

Type 2085 luminaire

Material/Color

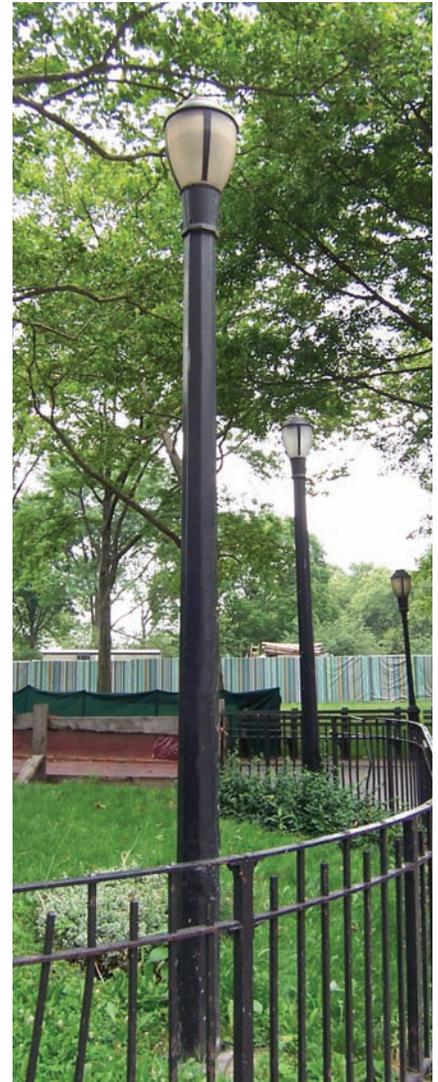
Steel/black, brown, or green

Cost Compared to SLP

\$

Spacing/Typical

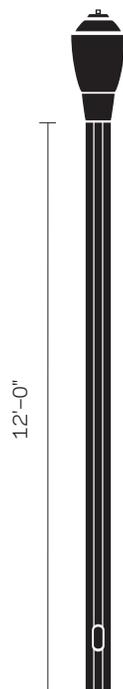
$\frac{2}{3}$: 1



World's Fair luminaire and pole: Battery Park, Manhattan



World's Fair Luminaire and Pole



TBTA

USAGE: OPTIONAL

The TBTA (Triboro Bridge Tunnel Authority) pole was originally introduced in the 1950s and '60s for mid-twentieth-century bridge construction projects such as the Robert F. Kennedy Bridge (formerly known as the Triboro Bridge). The TBTA replaced wooden lamp posts which lit parkways during the 1920s and '30s. The pole was recently installed as pedestrian lighting along the Hudson River Park Greenway and can support both historic and optional luminaires. Historic luminaires render the lights historic.

Applications

Parks, plazas, esplanades, pedestrian bridges, walkways, and bikeways

Lamping/Optics

Teardrop: Non-Cutoff, IES Type III or V (100W HPS or 150W HPS)

Shielded Teardrop: Cutoff, IES Type III or V (100W HPS or 150W HPS)

Material/Color

Fabricated steel/black, brown, or green

Cost Compared to SLP

\$\$\$\$\$

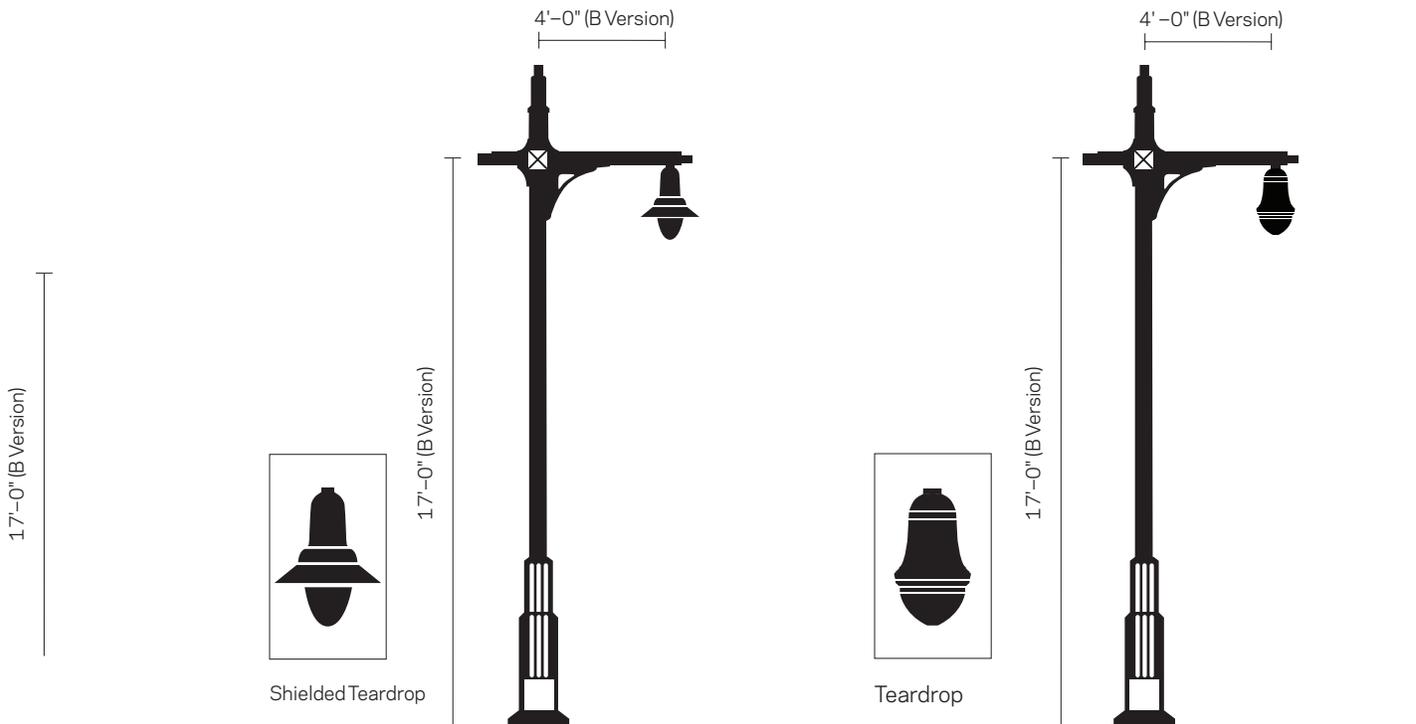
Spacing/Typical

For Teardrop or Shielded Teardrop:
 $\frac{2}{3}$: 1



Historic Shielded Teardrop luminaire and TBTA pole: Hudson River Parkway, Manhattan

Historic Luminaires with TBTA Pole



Round Top Head

USAGE: PILOT

The Round Top Head was installed on the piers in Gantry State Park in Long Island City, Queens. The luminaire is suitable for wet locations. NYC DOT plans to pilot the luminaire by FY 2010 in additional locations throughout New York City.

Applications

Parks, plazas, esplanades, pedestrian bridges, walkways, and bikeways

Lamping/Optics

Cutoff, Type V (150 W HPS)

Material/Color

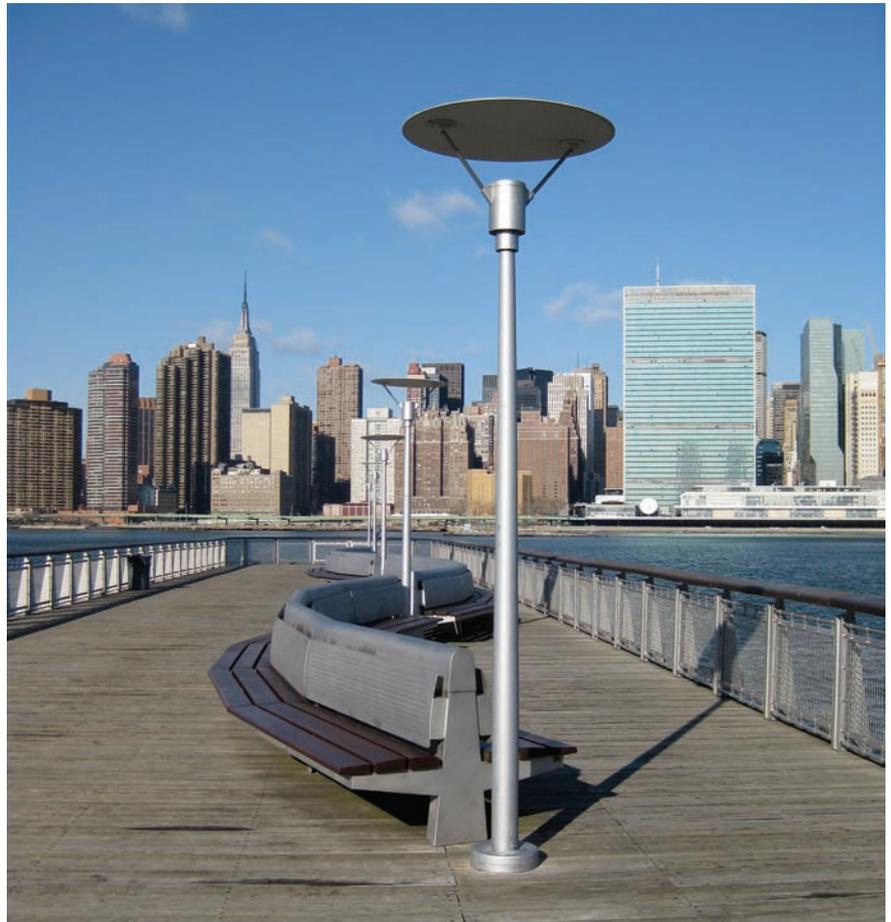
Aluminum/silver

Cost Compared to SLP

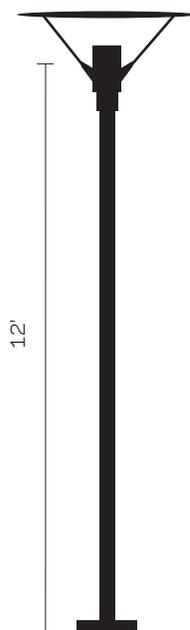
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Spacing/Typical

1/2:1



Round Top Head luminaire and pole: Gantry Park Plaza, Queens



LED Post Top

USAGE: PILOT

Beginning in 2008, NYC DOT has installed the LED Post Top luminaire at select locations in Central Park on a pilot basis. It is a more energy-efficient, white-light replacement for the Type B Luminaire.

Applications

Parks, plazas, esplanades, pedestrian bridges, walkways, and bikeways

Lamping/Optics

Available up to 80W maximum
Optional electrical control available for hi/lo dimming; high in energy savings

Material/Color

Hard mount tops made of spun aluminum with polyester powder coat finish

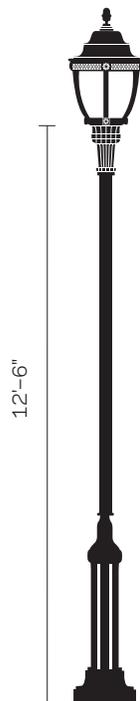


LED Post Top luminaire and Type B Pole, Central Park, Manhattan



LED Post Top

The luminaire can be supported by an aluminum or steel decorative pole.



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NYC DOT is no longer planning to pilot the LED Type A design

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NYC DOT is no longer planning to pilot the LED Type E luminaire

Traffic Signal Poles

Type M-2 Traffic Signal Pole

USAGE: STANDARD

Originally approved and first installed in 1953, the M-2 Traffic Signal Pole is standard for use at all traffic signal locations. It can be combined with any standard arm or bracket with the standard Cobra Head or an optional luminaire, or with any arm or bracket in the historic section to provide a consistent streetscape.

Applications

Intersections

Single or double mounting

Lamping/Optics

Standard: Cobra Head luminaire, 100W HPS or 150W HPS

Optional: Stad luminaire, 100W HPS or 150W HPS; Helm luminaire, 100W HPS or 150W HPS

Historic: Teardrop luminaire, 250W HPS

Material/Color

H.D.G. Steel/silver, green and brown



Type M-2 Traffic Signal Pole with standard luminaire: Murray Street, Manhattan



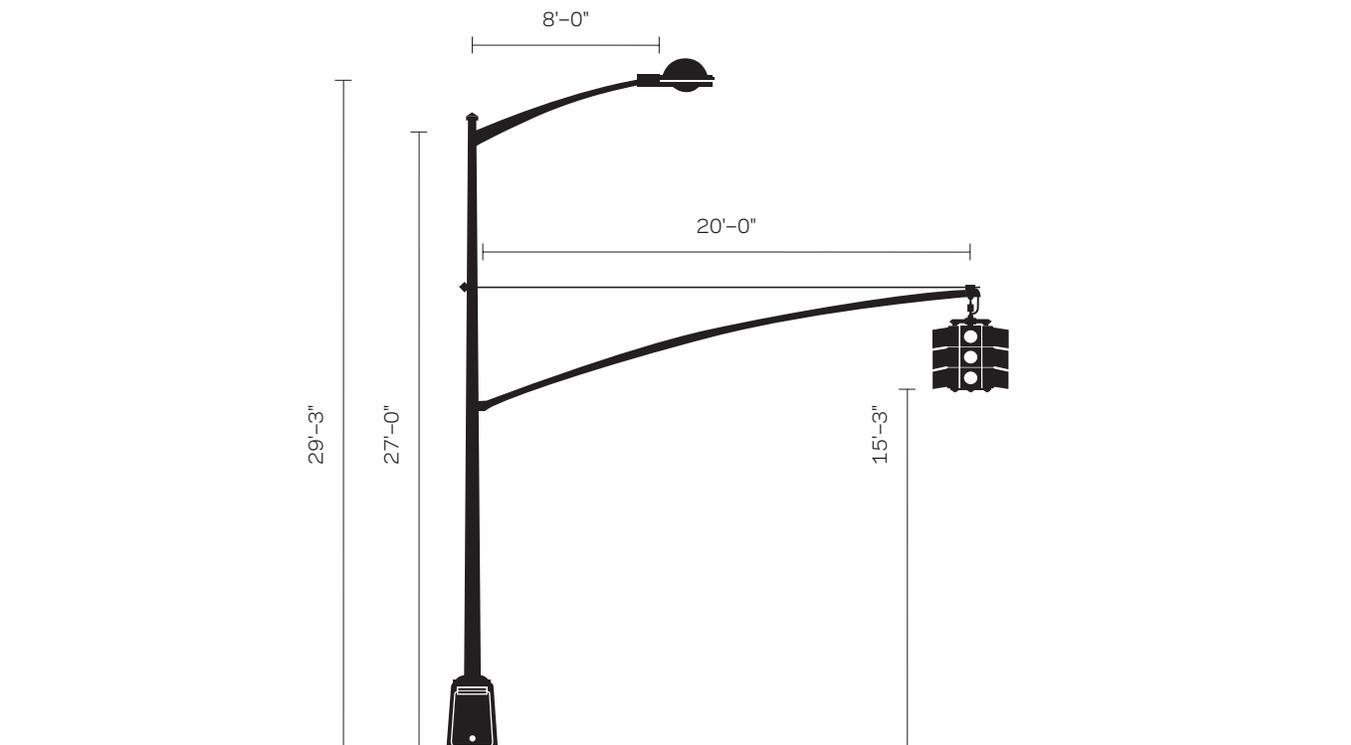
Type M-2 Traffic Signal Pole with historic luminaire: Warren Street, Manhattan



Type M-2 Traffic Signal Pole with historic luminaire: West 113th Street, Manhattan



Type M-2 Traffic Signal Pole with standard luminaire: Lafayette Street, Manhattan



Alliance Traffic Signal Pole

USAGE: OPTIONAL

The Alliance luminaire was originally introduced in the Lower Manhattan historic financial district by the Downtown Alliance business improvement district. The luminaire and optional traffic signal pole can be used as an alternative contemporary option in place of the standard M-2 Traffic Signal Pole but at an additional cost.

Applications

Intersections

Lamping/Optics

See Alliance luminaire, 100W HPS or 150W HPS

Material/Color

H.D.G. steel/silver and black



Alliance Traffic Signal Pole and luminaire: Murray Street, Manhattan