

TO: James L. App, City Manager
FROM: Doug Monn, Public Works Director
SUBJECT: Decorative Street Light Options and Night Lighting
DATE: July 5, 2011

NEEDS: For the City Council to review the attached information and provide staff with direction regarding exterior decorative lighting standards.

- FACTS:**
1. The present decorative street and park light standard was approved by City Council in the early 1990's. It has been installed in the City Park, Library-City Hall, Public Safety Center, Multi-model transportation center, and other areas in the downtown.
 2. The street and park lighting currently located in the downtown is owned, operated and maintained by the City.
 3. The City Council expressed interest in reviewing lighting options that could limit the upward bleed of light.
 4. In June 2010, a grant was secured to upgrade street and park light fixtures (owned by the City) to a more energy efficient bulb/filament. Included in the scope of work was a requirement the contractor provide options that would reduce the upward glow of ambient light. Staff requested that Council defer lighting fixture review until the grant funded upgrade was complete.
 5. In October of 2010, grant providers (ARRA and Energy Commission) informed the City that in order to qualify for the grant funds only American made components could be used. Because the original bid included only imported fixtures, the bids were rejected.
 6. Only one American manufacturer produces a fixture that meets energy savings requirements and can be fitted into the City's lights.
 7. The sole American made fixtures incorporate a 55 watt inductive bulb (that provides the same amount of light as the current 275 watt bulb). The new bulb will be fitted with a top mounted diffuser. As a result of the wattage reduction and top mounted diffuser, 94% of the light produced should focus downward, reducing upward bleed to approximately 6% or less. The existing fixtures have not been field tested to measure actual upward bleed, however, it is estimated could be as high as eight (8) to ten (10) percent.

ANALYSIS &

CONCLUSION: City owned decorative street and park lights will be upgraded with energy saving bulbs. The new energy bulbs should produce efficient lighting with less obtrusive glow, reduce electric costs approximately 30%, and eliminate maintenance for eight years.

Once installed if the ARRA retrofit fails to satisfy council's concerns, a new decorative street light standard with a firm exterior hat could be examined. This product would not be similar to the acorn glass we have in place today. Alternatively if council is satisfied

that the retrofit addresses night sky impact concerns, the new standards can be provided to PG&E for their future installations.

Other fixtures installed around town are owned and operated by PG&E. Any retrofit of those fixtures is the responsibility of PG&E.

PG&E bulbs options are somewhat limited (see attached), however PG&E is cost effective for the City when compared with the option of expanding the number of City owned fixtures. Once installed, PG&E provides all fixture maintenance including repair and replacement at no cost to the City. Fixtures supplied by PG&E can be viewed at 4th Street, 24th and Spring Streets at Flamson School and along the west side of Riverside Avenue at the Event Center parking lot.

POLICY

REFERENCE: Downtown Decorative Light Standards; Uptown/Town Center Specific Plan

FISCAL

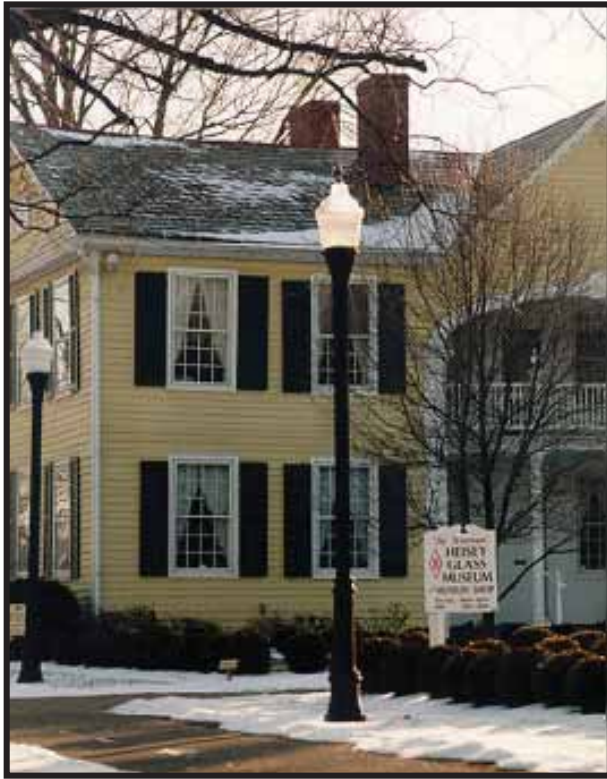
IMPACT: The City owns 365 pole mounted light fixtures. Replacement of existing fixtures with a new standard; would cost \$4,000 to \$8,000 per fixture (including fixture, pole, bulb and installation). The retrofit cost would be \$1.5 – 3.0 million (not including the cost of future maintenance and bulb replacement).

- OPTIONS:**
- a. That City Council reaffirm the existing decorative lighting standard using the PG&E supplied fixtures.
 - b. That City Council provides direction regarding selection of a new decorative standard, intended lighting coverage and efficiency.
 - c. Amend, modify or reject the above option.

Attachments (1)

- 1) Available PG&E light standards

PG&E Guide to Street Lighting



PG&E can help beautify your city's downtown and residential neighborhoods with quality street lights.

Enlist PG&E to become your outdoor lighting company.

PG&E can help upgrade the lighting for your downtown areas, residential streets, parks, marinas and public building exteriors.

Upgrading your outdoor lighting will:

- Improve traffic and pedestrian safety
- Reduce crime
- Attract customers to commercial areas
- Enhance the appearance of historic districts
- Increase civic pride in your community

PG&E will assist with capital costs and after the lighting system is installed, cover all electrical service and maintenance under an affordable rate structure.



Fixture Styles Available



Decorative
Acorn



Decorative
Teardrop



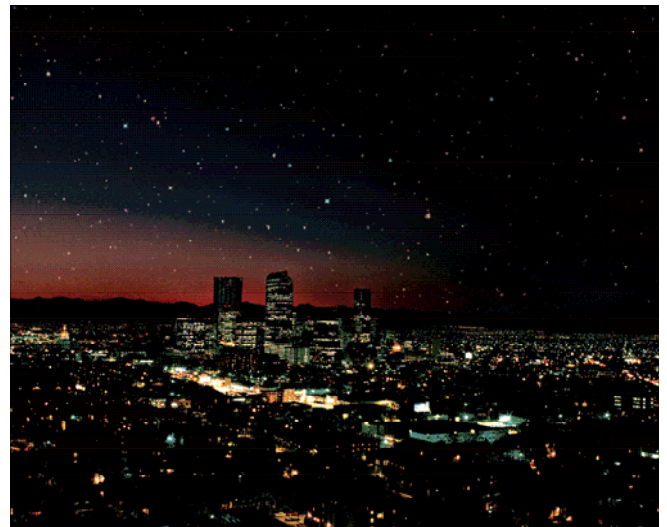
Full Cut-Off
Contemporary

PG&E has selected only the highest quality manufacturers to provide lighting fixtures and poles. PG&E has approved these lighting products for their standards because they meet their demanding requirements for

- durability
- energy efficiency
- reliability
- ease of maintenance
- reduced uplight
- appearance

Free Lighting Design Service

Lighting professionals will provide a complete outdoor lighting design specifying pole locations and light patterns. This will ensure that appropriate light levels are achieved. This design assistance can also help avoid problems of light trespass into residential windows before the fixtures are installed. This service is provided at no charge to cities or homebuilders by one of PG&E's street light suppliers.



To help address the problem of urban sky glow, the fixtures offered by PG&E are provided with internal reflectors to reduce uplight.

Decorative Acorn Fixture

The decorative acorn provides a classic look to any downtown streetscape or residential neighborhood and will complement your community for many years to come.

The decorative acorn features:

- high strength, non-yellowing, borosilicate glass globe
- side access door for ease of electrical service
- fade resistant polyester powder coat finish
- “cut-off” lunar optics to reduce sky glow
- choice of light patterns

Decorative Acorn street lights fall under PG&E Rate Schedule LS-1D.



Glass optics retain their clarity and sparkle for years to come versus plastic optics that yellow from UV degradation.



Internal reflectors reduce uplight to prevent urban sky glow.



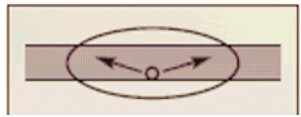
A side access door and unitized ballast tray allow ease of maintenance.

Decorative Acorn Fixture Options

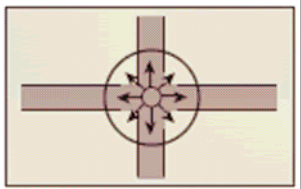
Ribs and Bands



Light Patterns



Narrow Asymmetric



Symmetric

Colors

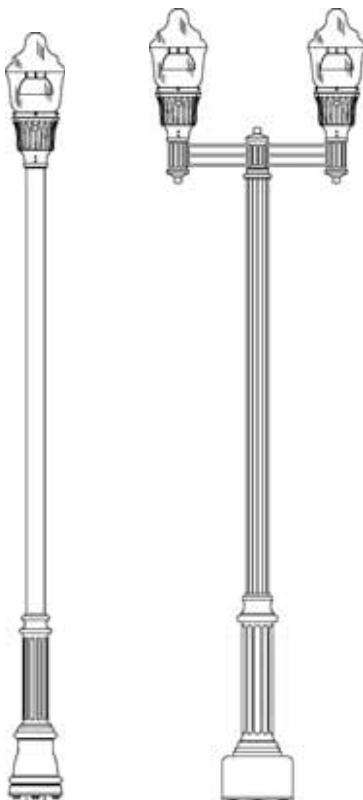


Dark Green

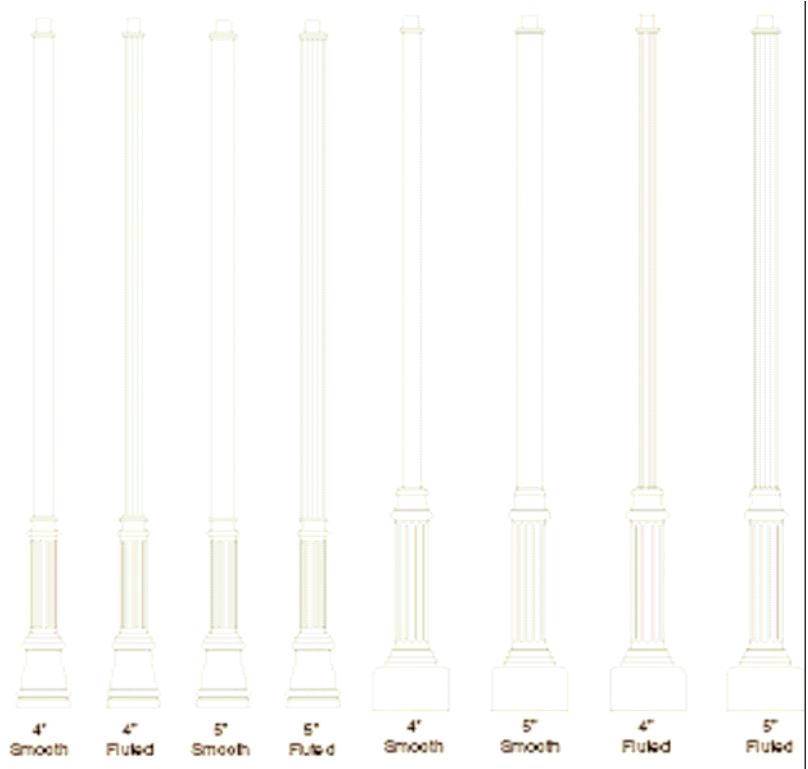


Black

Post Top or Twin Crossarm



Poles



Charleston Style

Hamilton Style

Decorative Teardrop Fixture

The decorative teardrop will enhance the appearance of architecture and landscaping in both traditional and modern surroundings.

The decorative teardrop features:

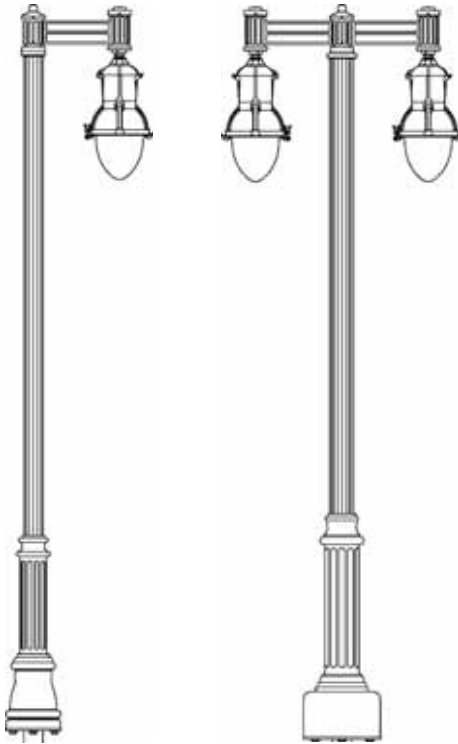
- high strength, non-yellowing, borosilicate glass
- fade resistant polyester powder coat finish
- “cut-off” optics to reduce sky glow
- internal house-side shield to reduce glare

Decorative Teardrop street lights fall under PG&E Rat Schedule LS-1E.

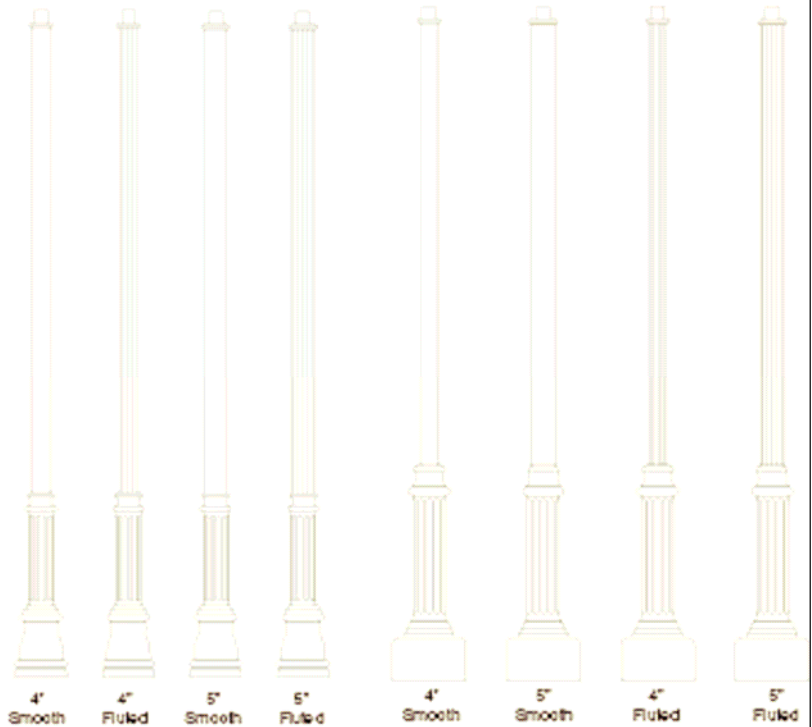


Decorative Teardrop Fixture Options

Single Arm or Twin Crossarm



Poles



Colors



Dark Green



Black

Charleston Style

Hamilton Style

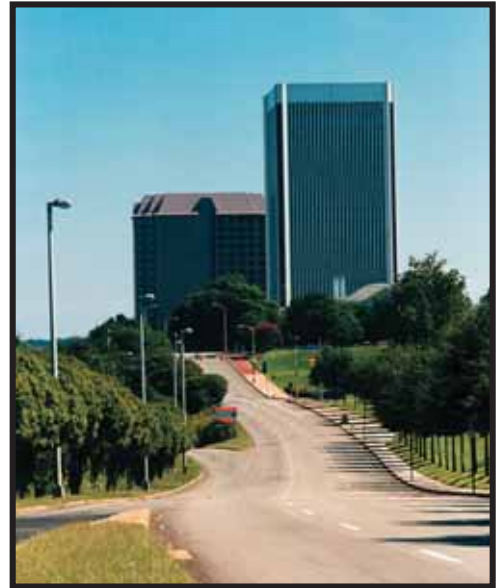
Full Cut-Off Contemporary Fixture

The Full Cut-Off Contemporary fixture provides advanced optical systems suitable for multiple applications in an aesthetically pleasing design.

The Full Cut-Off Contemporary fixture features:

- high strength, non-yellowing, borosilicate glass
- Tool-less entry for ease of maintenance
- “cut-off” optics to reduce sky glow
- precision optics that reduce number of poles required

Decorative Teardrop street lights fall under PG&E Rate Schedule LS-1__.



Full-Cut-Off Contemporary Fixture Options

Light Patterns

- Forward Throw
- Wide Roadway



Colors

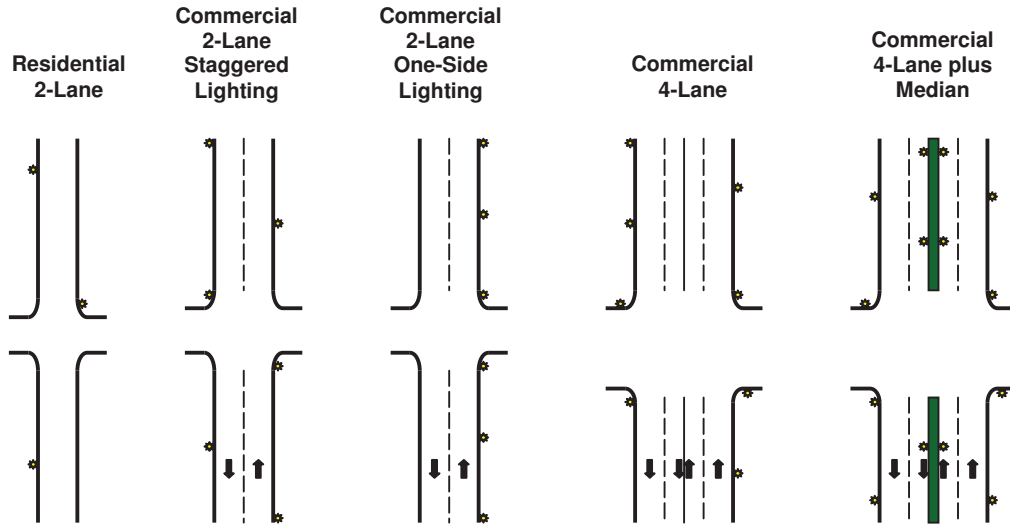


Bronze



Gray

Recommended Pole Spacing



Note that pole spacings are approximate. PG&E's lighting vendors can provide a complete lighting design and layout for your specific application.

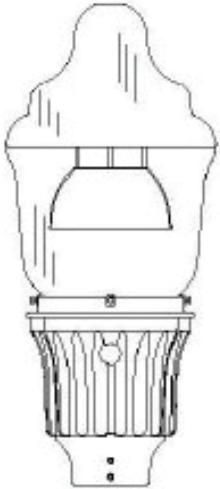
Lamp Wattage	Pole Height (ft)	Decorative Acorn Recommended Pole Spacing (ft)				
		Roadway				
		Residential 2-Lane	Commercial 2-Lane		Commercial 4-Lane	Commercial 4-Lane plus Median
			Staggered	One-Side		
70	12					
	14					
	16					
100	12					
	14					
	16					
150	12					
	14					
	16					

Lamp Wattage	Pole Height (ft)	Decorative Teardrop Recommended Pole Spacing (ft)				
		Roadway				
		Residential 2-Lane	Commercial 2-Lane		Commercial 4-Lane	Commercial 4-Lane plus Median
			Staggered	One-Side		
70	12					
	14					
	16					
100	12					
	14					
	16					
150	12					
	14					
	16					

Lamp Wattage	Pole Height (ft)	Full Cut-Off Contemporary Recommended Pole Spacing (ft)				
		Roadway				
		Residential 2-Lane	Commercial 2-Lane		Commercial 4-Lane	Commercial 4-Lane plus Median
			Staggered	One-Side		
250	20					
	25					
400	20					
	25					

Decorative Acorn Ordering Information

Consult your local PG&E representative for additional options and codes that may be available.



Decorative Acorn with Cutoff Optics and Twistlock Photocontrol Receptacle			
Lamp Wattage	Light Pattern	Color	PG&E Code
70	Narrow Asymmetric	Black	350385
70	Narrow Asymmetric	Dark Green	350386
70	Symmetric	Black	350387
70	Symmetric	Dark Green	350388
100	Narrow Asymmetric	Black	350389
100	Narrow Asymmetric	Dark Green	350390
100	Symmetric	Black	350391
100	Symmetric	Dark Green	350392
150	Narrow Asymmetric	Black	350393
150	Narrow Asymmetric	Dark Green	350394
150	Symmetric	Black	350395
150	Symmetric	Dark Green	350396

Fixture Notes:

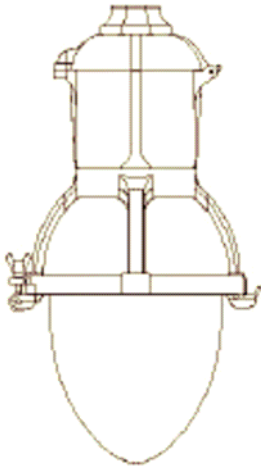
1. All fixtures are high pressure sodium, 120V
2. Photocontrols are not included and must be ordered separately. Holophane #PCTWSTL120 recommended

Decorative Acorn Accessories	
Description	PG&E Code
Gold Ribs and Bands	XXXXXX



Twin Decorative Acorn Crossarm		
Description	Color	PG&E Code
Twin Crossarm	Dark Green	350441
Twin Crossarm	Black	350442

Decorative Teardrop Ordering Information



Decorative Teardrop with Cutoff Optics			
Lamp Wattage	Light Pattern	Color	PG&E Code
70	Asymmetric with Shield	Black	350358
70	Assymmetric with Shield	Dark Green	350359
100	Asymmetric with Shield	Black	350381
100	Assymmetric with Shield	Dark Green	350397
150	Asymmetric with Shield	Black	350398
150	Assymmetric with Shield	Dark Green	350399

Fixture Notes:

1. All fixtures are high pressure sodium, 120V
2. Teardrop arm with photocontrol receptacle must be order separately.



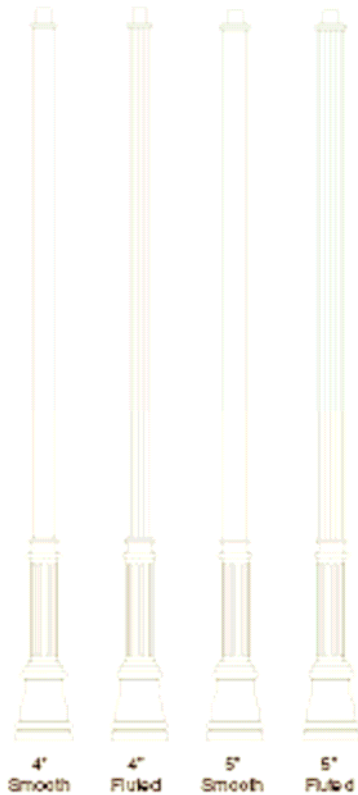
Single Arm for Decorative Teardrop with Photocontrol Receptacle (PCR)



Twin Crossarm for Decorative Teardrops with Photocontrol Receptacles (PCR)

Decorative Teardrop Arms		
Description	Color	PG&E Code
Single Arm with PCR	Dark Green	350447
Single Arm with PCR	Black	350446
Twin Crossarm with PCR	Dark Green	350449
Twin Crossarm with PCR	Black	350448

Decorative Pole Ordering Information

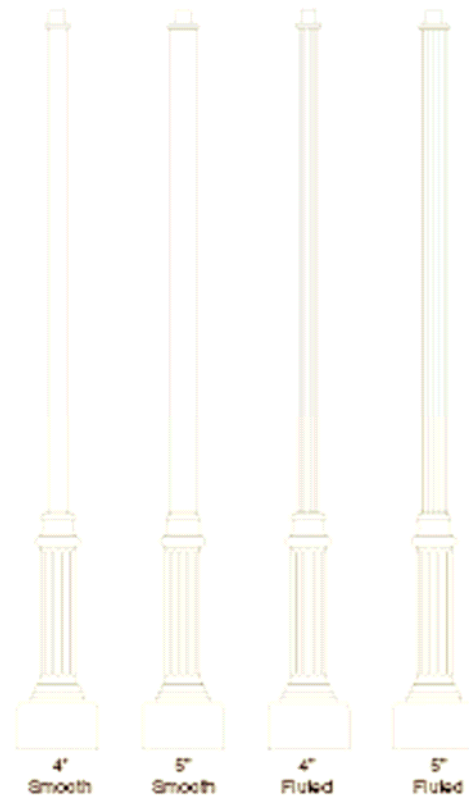


Charleston Style

Charleston Style 4" Extruded Aluminum Poles			
Height (in)	Style	Color	PG&E Code
12	Fluted	Black	350402
12	Fluted	Dark Green	350401
12	Smooth	Black	350403
12	Smooth	Dark Green	350404
14	Fluted	Black	350409
14	Fluted	Dark Green	350410
14	Smooth	Black	350411
14	Smooth	Dark Green	350412
Charleston Style 5" Extruded Aluminum Poles			
Height (in)	Style	Color	PG&E Code
12	Fluted	Black	350405
12	Fluted	Dark Green	350406
12	Smooth	Black	350407
12	Smooth	Dark Green	350408
14	Fluted	Black	350413
14	Fluted	Dark Green	350414
14	Smooth	Black	350415
14	Smooth	Dark Green	350416
16	Fluted	Black	350417
16	Fluted	Dark Green	350418
16	Smooth	Black	350419
16	Smooth	Dark Green	350420

Decorative Pole Ordering Information (continued)

Hamilton Style 4" Extruded Aluminum Poles			
Height (in)	Style	Color	PG&E Code
12	Fluted	Black	350421
12	Fluted	Dark Green	350422
12	Smooth	Black	350423
12	Smooth	Dark Green	350424
14	Fluted	Black	350429
14	Fluted	Dark Green	350430
14	Smooth	Black	350431
14	Smooth	Dark Green	350432
Hamilton Style 5" Extruded Aluminum Poles			
Height (in)	Style	Color	PG&E Code
12	Fluted	Black	350425
12	Fluted	Dark Green	350426
12	Smooth	Black	350427
12	Smooth	Dark Green	350428
14	Fluted	Black	350433
14	Fluted	Dark Green	350434
14	Smooth	Black	350435
14	Smooth	Dark Green	350436
16	Fluted	Black	350437
16	Fluted	Dark Green	350438
16	Smooth	Black	350439
16	Smooth	Dark Green	350440



Hamilton Style

Pole Notes:

1. 12' and 14' poles with 5" extrusions should only be used with twin fixture assemblies. 16' poles may be used with either single or twin fixture assemblies.
2. Anchor bolts, direct burial foundation and arms must be ordered separately as required.

Accessories	
Description	PG&E Code
3/4" x 24" x 3" Anchor Bolts for use with Charleston Poles	350443
3/4" x 24" x 3" anchor bolts for use with Hamilton Poles	350444
Anchor Bolt Adaptor	350357
Direct Burial Foundation	350445

Accessory Notes:

1. Anchor bolts for Charleston Poles feature a 7" bolt circle template
2. Anchor bolts for Hamilton Poles feature an 11" bolt circle template
3. Adaptor permits mounting a 4 bolt, 7" diameter pattern post to an existing 3 bolt, 8"

Full Cut-Off Contemporary Fixture Ordering Information

Full Cut-Off Contemporary Fixture with Twistlock Photocontrol Receptacle			
Lamp Wattage	Light Pattern	Color	PG&E Code
250	Forward Throw	Bronze	XXXXXX
250	Forward Throw	Gray	XXXXXX
250	Wide Roadway	Bronze	XXXXXX
250	Wide Roadway	Gray	XXXXXX
400	Forward Throw	Bronze	XXXXXX
400	Forward Throw	Gray	XXXXXX
400	Wide Roadway	Bronze	XXXXXX
400	Wide Roadway	Gray	XXXXXX

Fixture Notes:

1. All fixtures are high pressure sodium, 120V
2. Photocontrols are not included and must be ordered separately. Holophane #PCTWSTL120 recommended



For additional information on upgrading your city's street lights, contact your local PG&E Service Planning Office:

Angels Camp	(209) 736-6639	Monterey	(831) 648-3231
Antioch	(925) 779-7755	Napa	(707) 257-5918
Auburn	(530) 889-3270	Oakland	(510) 437-2233
Bakersfield	(661) 398-5894	Placerville	(530) 621-7265
Chico	(530) 894-4749	Redding	(530) 246-6553
Clovis	(559) 263-5632	Richmond	(510) 231-2852
Concord	(925) 674-6457	Sacramento	(916) 386-5112
Cupertino	(408) 725-3325	Salinas	(831) 784-3614
Daly City	(650) 985-1241	San Carlos	(650) 598-7204
Dinuba	(559) 591-2314	San Francisco	(415) 695-3500
Eureka	(707) 445-5533	San Jose	(408) 494-1700
Fremont	(510) 683-3000	San Luis Obispo	(805) 546-5247
Fresno	(559) 263-7400	San Rafael	(415) 257-3431
Grass Valley	(530) 477-3245	Santa Cruz	(831) 479-3114
Half Moon Bay	(650) 598-7467	Santa Maria	(805) 346-2232
Hayward	(510) 784-3210	Santa Rosa	(707) 579-6355
Jackson	(209) 223-2300	Selma	(559) 891-2143
Lemoore	(559) 924-9540	Stockton	(209) 942-1495
Livermore	(925) 373-2610	Templeton	(805) 434-4416
Madera	(209) 675-2215	Tracy	(209) 836-0440
Manteca	(209) 932-6412	Ukiah	(707) 468-3914
Mariposa	(209) 966-3446	Vacaville	(707) 449-5725
Marysville	(530) 634-6442	Vallejo	(707) 648-5698
Merced	(209) 726-6487	Woodland	(530) 661-5651
Modesto	(209) 576-6640		

