



Electrical Supplies, Powerful Service.
Superior Project Management

Quotations & Project Management

770-840-4160

Date: FEBRUARY 22, 2012

Project Manager:

Project:

Contractor:

MFG	TYPE	QTY	CATALOG NUMBER	COMMENTS
HAPCO		6	12' PEDESTRIAN POLE 16570-012P**	
HAPCO		13	33.5' SITE POLE 13345-001P** SINGLE	
HAPCO			13345-002P** DOUBLE	
			FIXTURES:	
HOLOPHANE	FITTER	13	BOSTON HARBOR STYLE DECORATIVE ARM FITTER #BHLF200SCA-AS	
HOLOPHANE	LED	13	MPL-150-4K-AS-A-4	
HOLOPHANE	LED	13	MPL-150-4K-AS-A-4	
MCGRAW	HPS		GAR-150-HPS-MT-5-C-A-A	
MCGRAW	LED	6	GAR-050-LED-E1-5-C-C-A	



Color: GN8TX

Submitted by Lighting Associates, Inc.



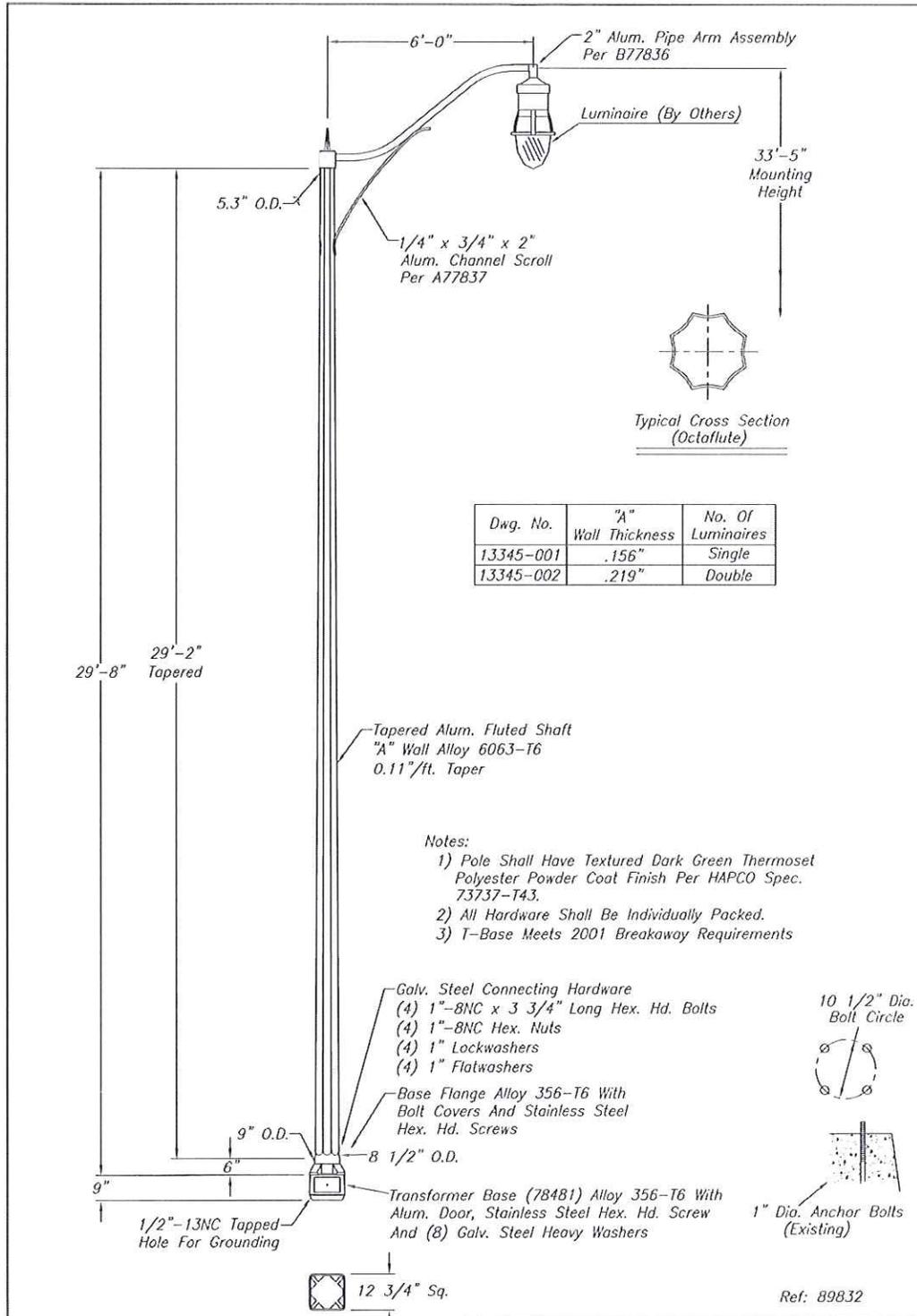
Job Name:
CITY OF SANDY SPRINGS - C-TECH

Catalog Number:
13345-001P**

Type:

Notes: 33.5" MH ALUM. POLE WITH 9" X .156" TAPER FLUTED SHAFT, 6" SINGLE BRACKETS, T-BASE, AND

LAI12-12700



Dwg. No.	"A" Wall Thickness	No. Of Luminaires
13345-001	.156"	Single
13345-002	.219"	Double

Notes:

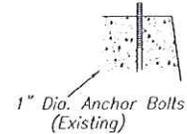
- 1) Pole Shall Have Textured Dark Green Thermoset Polyester Powder Coat Finish Per HAPCO Spec. 73737-T43.
- 2) All Hardware Shall Be Individually Packed.
- 3) T-Base Meets 2001 Breakaway Requirements

- Galv. Steel Connecting Hardware
- (4) 1"-8NC x 3 3/4" Long Hex. Hd. Bolts
- (4) 1"-8NC Hex. Nuts
- (4) 1" Lockwashers
- (4) 1" Flatwashers

- Base Flange Alloy 356-T6 With Bolt Covers And Stainless Steel Hex. Hd. Screws

- Transformer Base (78481) Alloy 356-T6 With Alum. Door, Stainless Steel Hex. Hd. Screw And (8) Galv. Steel Heavy Washers

10 1/2" Dia. Bolt Circle



Ref: 89832

NO.	REVISIONS	DATE

WARNING: DO NOT INSTALL LIGHTING POLES WITHOUT LUMINAIRES

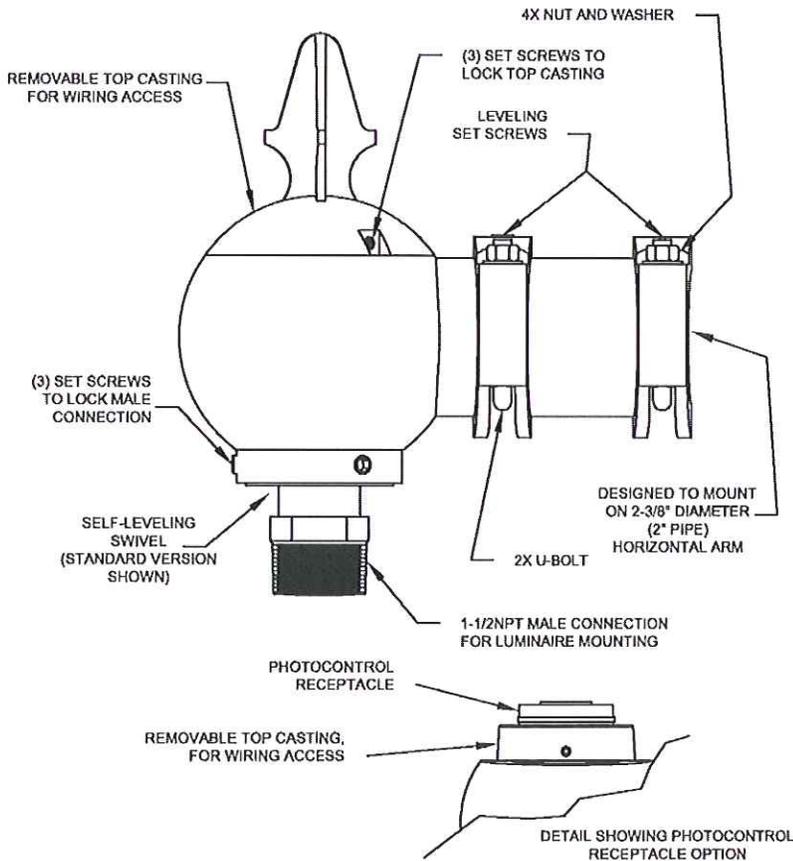
hapco
Abingdon, Va

TITLE: DECORATIVE LIGHT POLE
CUSTOMER: GEORGIA POWER
SCALE: 30 DATE: 01/14/2008
BY: TNB DWG. NO.: B13345
CHK'D:

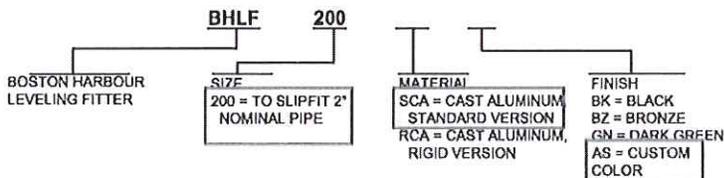
B13345

Boston Harbour Style Decorative Arm Fitter

For Use with 1-1/2NPT
Top Mount Luminaires



ORDERING INFORMATION



OPTIONS
-R = PHOTOCONTROL RECEPTACLE (REPLACES THE STANDARD TOP COVER) FOR NEMA TWISTLOCK PHOTOCONTROLS

Specifications

GENERAL DESCRIPTION

The Boston Harbour style decorative arm fitter is designed to replicate the look of period cast arm mounts.

MATERIAL

The fitter body, top cover, and threaded male connector shall be heavy wall cast aluminum. All mounting and locking hardware shall be stainless steel.

INSTALLATION

The fitter is provided with two U-bolts with washers and nuts and two leveling set screws that lock the fitter to a 2" horizontal arm and allow a +/- 5 degree adjustment from horizontal to the fitter. On the Standard version, a pivoting 1-1/2NPT threaded male connection provides a +/- 4 degree adjustment from vertical. On the Bridge version, a stainless steel nipple provides a 1-1/2NPT threaded male connection. Three (3) stainless steel set screws lock the threaded male connector in place. The cast top cover can be removed to allow access to the inside of the fitter to facilitate wire connections. Three (3) stainless steel set screws lock the cover to the fitter.

FINISH

The fitter is finished with a polyester powder paint applied after a seven stage pretreatment process to insure maximum durability.

ARCHITECTURAL OUTDOOR ORDER #:

TYPE:

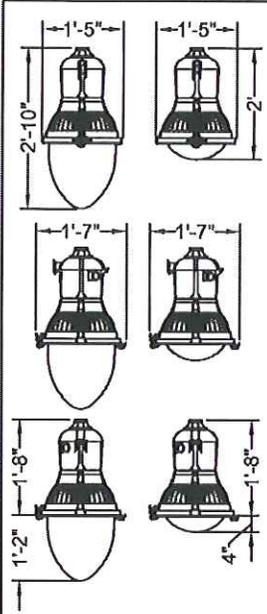
DRAWING NO: US3674

THIS DRAWING, WHEN APPROVED, SHALL BECOME THE COMPLETE SPECIFICATION FOR THE MATERIAL TO BE FURNISHED BY HOLOPHANE ON THE ORDER NOTED ABOVE. A UNIT OF SIMILAR DESIGN MAY BE SUPPLIED, BUT ONLY AFTER APPROVAL BY THE CUSTOMER IN WRITING. ON POLE ORDERS AN ANCHOR BOLT TEMPLATE PRINT WILL BE SUPPLIED WITH EACH ANCHOR BOLT ORDER TO MATCH THE POLE PROVIDED.

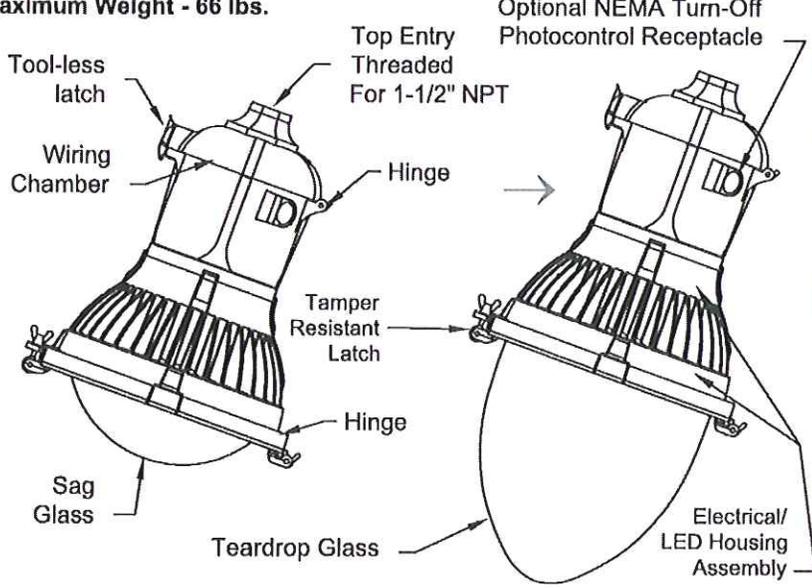
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HOLOPHANE®
LEADER IN LIGHTING SOLUTIONS
An Acuity Brands Company
214 OAKWOOD AVENUE - NEWARK, OHIO 43055

SCALE: N/A
DRAWN: BHH
APP'D:
DATE: 2/3/09



Maximum Effective Projected Area - 2.37 ft²
 Maximum Weight - 66 lbs.



Memphis

LED

DECORATIVE
OUTDOOR



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ORDERING INFORMATION:

<p>COVER TYPE MPL = Memphis LED</p>	<p>COLOR TEMPERATURE 4K = 4000 SERIES CCT 5K = 5000 SERIES CCT 6K = 6000 SERIES CCT</p>	<p>VOLTAGE AS = AUTO-SENSING VOLTAGE (120 THRU 277V) AH = AUTO-SENSING VOLTAGE (347 THRU 480V)</p>	<p>HOUSING COLOR A = As Specified B = Black D = Dark Green RAL6005 E = Brown Green RAL6008 F = Dark Green RAL6009 H = Dark Green RAL6012 N = Green W = White Z = Bronze</p>	<p>OPTICS 4 = TEARDROP ASYMMETRIC 7 = SAG CLEAR ASYMMETRIC</p>
<p>SOURCE & WATTAGE BALLAST (LED DRIVER) 150 = 150 W (350mA) 110 = 110 W (350mA)</p>				

ACCESSORIES
 SP1 = REPLACEMENT SURGE PROTECTOR 120-277 VOLTS
 SP3 = REPLACEMENT SURGE PROTECTOR 347-480 VOLTS

OPTIONS
 R = TWIST-OFF PHOTOCONTROL RECEPTACLE
 DS = DEEP SKIRT
 SS = SHORT SKIRT
 EL = EXTENDED LIFE (120-277V ONLY)

P27 = PHOTOCONTROL 105-305 VOLT (USED WITH 'R' OPTION)
 P48 = TWISTLOCK PHOTOCONTROL 347-480 VOLT
 PSC = SHORTING CAP
 L1H = 1.5 FT. PREWIRED LEADS
 L03 = 3 FT. PREWIRED LEADS

L10 = 10 FT. PREWIRED LEADS
 L20 = 20 FT. PREWIRED LEADS
 L25 = 25 FT. PREWIRED LEADS
 L30 = 30 FT. PREWIRED LEADS

Specifications

DESCRIPTION
 The Memphis luminaire is styled to replicate the "teardrop" luminaires that lighted boulevards in the first half of this century. Designed for light control and ease of installation and maintenance, the Esplanade has a precision optical system for true street lighting performance.

WIRING CHAMBER
 The wiring chamber has a 1-1/2 Inch, gasketed, NPT threaded entry for pendant mounting. A stainless steel set screw locks the unit in position. A three station terminal block will accept #16 through #8 wires and is prewired to one half of the plug assembly that connects to the removable electrical module.

ELECTRICAL / REFLECTOR ASSEMBLY
 The electrical / reflector assembly hinges down from the wiring chamber for ease in wiring and to facilitate the removal of the electrical module. The assembly is secured in place by a stainless steel latch. The utilized electrical module consists of the electronic driver and components mounted to an aluminum plate that is easily removed by loosening two screws in keyhole slots. The disconnect plug connects the ballast to the terminal block in the wiring chamber.

REFRACTOR / DOOR ASSEMBLY
 The cast aluminum door supports a teardrop or sag shaped, thermal resistant borosilicate glass refractor that controls the light to provide an I.E.S. asymmetric cut off distribution. The combination of reflector, refractor maximize efficiency and uniformity of illumination while controlling luminaire brightness. The refractor assembly and decorative skirt (when applicable) assembly hinges from the electrical / reflector assembly and is latched by a tamper-resistant, color matched bracket and wing nut assembly.

BALLAST
 LED driver (see other page)

FINISH / MATERIAL
 The luminaire is finished with polyester powder paint to insure maximum durability. All castings utilize low copper aluminum for maximum corrosion resistance and all exposed hardware is stainless steel.

CUL/U.L. LISTING
 CU/UL Listing suitable for wet locations up to 40 degrees C.
 IP RATING 66

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ORDER #:	
TYPE:	1 of 2
DRAWN:	KRW
DATE:	9-21-10
DWG NO:	LUM MPL

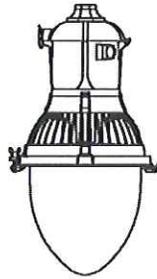


Teardrop Glass
Asymmetric

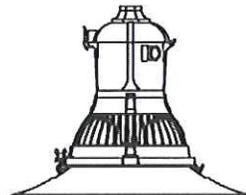
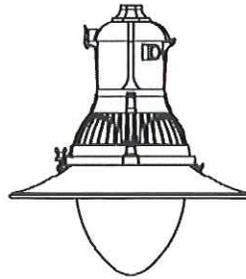


Sag Glass
Symmetric
Asymmetric

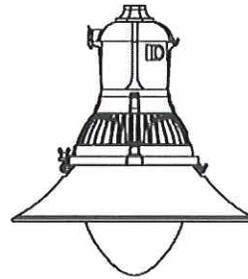
Standard



Shallow Skirt

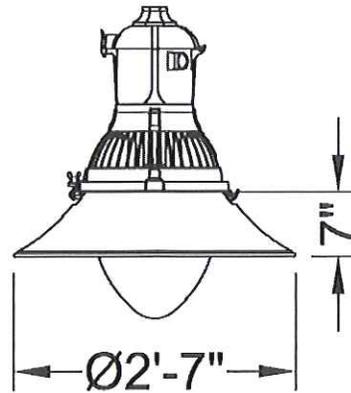
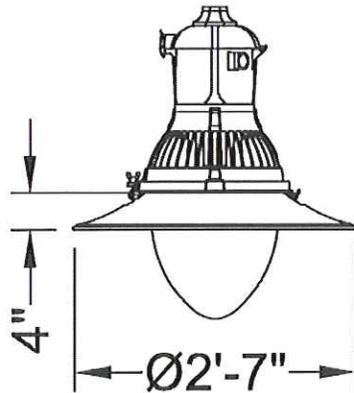


Deep Skirt



Mark Appropriate
Box for Trim Option

Skirt Dimensions



Memphis

LED

DECORATIVE
OUTDOOR

HOLOPHANE[®]
LEADER IN LIGHTING SOLUTIONS
An Acuity Brands Company

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THIS DRAWING, WHEN APPROVED, SHALL BECOME THE COMPLETE SET OF CONTRACT DOCUMENTS FOR THE PROJECT. ANY CHANGES TO THE ORDER NOTED ABOVE, A LIST OF SUPPLIERS OR MAY BE SUPPLIED, BUT ONLY AFTER APPROVAL BY THE CUSTOMER. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED. ALL MATERIALS SHALL BE SUPPLIED WITH EACH ANCHOR BOLT ORDER TO MATCH THE ROLE PROVIDED. THIS DRAWING IS THE PROPERTY OF HOLOPHANE AND IS LOANED TO THE USER FOR DESIGN AND CONSTRUCTION PURPOSES ONLY. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF HOLOPHANE. ANY DETRIMENTAL TO OUR INTERESTS, AND ONLY IN CONNECTION WITH MATERIAL FURNISHED BY HOLOPHANE.

ORDER #:	
TYPE:	
DRAWN:	KRW
DATE:	9-21-10
DWG NO:	LUM_MPL

Photometric Report

CATALOG NUMBER: ESL 150 4K AS X 4 FILENAME: ESL_150_4K_AS_X_4.IES

Thursday, February 23, 2012

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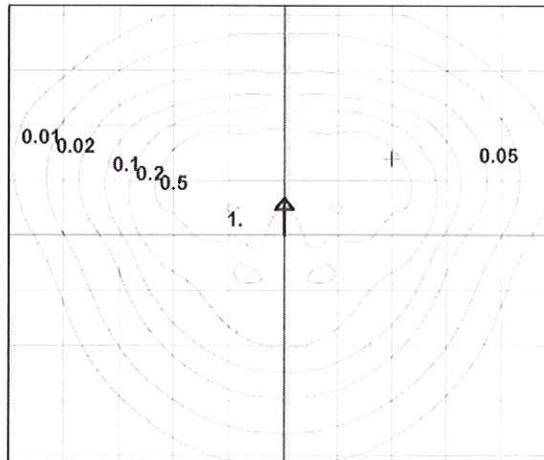
IESNA:LM-63-2002
[TEST] 500793
[TESTDATE] 10/7/2010
[ISSUEDATE] 10/14/2010
[TESTLAB] HOLOPHANE TESTING LABORATORIES
[TESTMETHOD] IES LM- 79-08
[MANUFAC] Holophane
[LUMCAT] ESL 150 4K AS X 4
[LUMINAIRE] LED TEARDROP
[LAMPCAT] 136 LED ARRAY BIN 5B1-R3
[LAMP] 150W 136 LED ARRAY
[BALLAST] 120V 150W ELECTRONIC LED DRIVER
[BALLASTCAT] LED-INTA-0350C-425-F0
[DISTRIBUTION] TYPE III, SHORT, BUG RATING: B3 - U3 - G3
[_LAMPPOSITION] 0 , 0
[_LAMPTYPE] LED
[_LAMPWATTAGE] 150
[_MOUNTING] ARM
[_FAMILY] Teardrop LED
[_PRODUCTID] 05aca95c-7c77-4d91-a2f0-83f88e3bbce5
[_ABSOLUTE] NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.
[_ABSOLUTELUMENS] 10900
[OTHER] 4094
    
```

SUMMARY DATA

```

HEMISPHERES TESTED:      BOTH
EFFICIENCY (Total):      100.0 %
EFFICIENCY (Down / Up):  96.8 % / 3.2 %
EFFICIENCY (Street / House): 70.6 % / 29.4 %
ROADWAY CLASSIFICATION:  TYPE III, SHORT
CUTOFF CLASSIFICATION:   SEMICUTOFF
LUMENS/LAMP:             10900.69
NO. OF LAMPS:           1
LUMINOUS OPENING: VERTICAL CYLINDER
    Diameter:            1.24 (Feet)
    Height:              1.19
INPUT WATTS:             148
TER - Task Efficacy (LPW): 57 (BF = 1)
TER Category:           Roadway
    
```

ISO-ILLUMINANCE DIAGRAM (fc)



Mounting Height	Multiplier
10	9.000
15	4.000
20	2.250
25	1.440
30	1.000
35	0.735
40	0.563
45	0.444
50	0.360

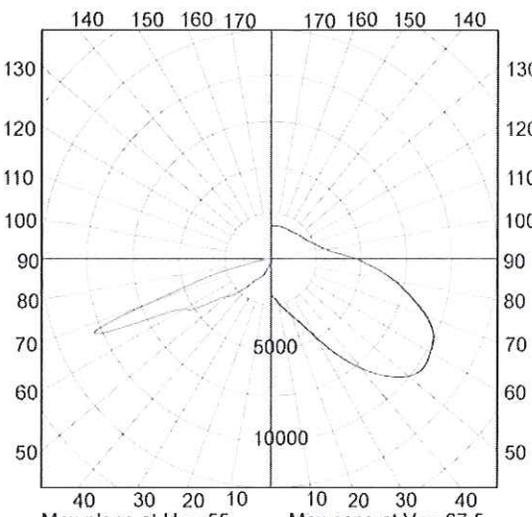
+ = Point of max candela

Mounting Height = 30 Feet. Each box represents one mounting height.

**LUMINAIRE CLASSIFICATION SYSTEM
(BUG RATING = B3-U3-G3)**

FORWARD LIGHT	Lumens (% of Lamp Lumens)
FL (0-30):	262 (2.4%)
FM (30-60):	3021 (27.7%)
FH (60-80):	3998 (36.7%)
FVH(80-90):	236 (2.2%)
BACKLIGHT	
BL (0-30):	177 (1.6%)
BM (30-60):	1091 (10.0%)
BH (60-80):	1578 (14.5%)
BVH(80-90):	188 (1.7%)
UPLIGHT	
UL (90-100):	150 (1.4%)
UH (100-180):	199 (1.8%)
TRAPPED LIGHT:	0 (0.0%)

PLANE AND CONE DIAGRAM



Max plane at H = 55 Max cone at V = 67.5
MAX CANDLEPOWER: 10372

Photometric Report

CATALOG NUMBER: ESL 150 4K AS X 4 FILENAME: ESL_150_4K_AS_X_4.IES

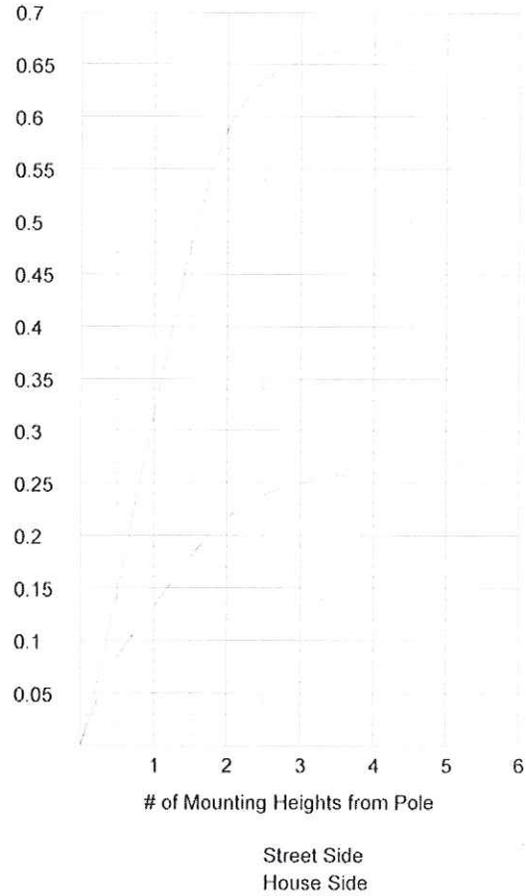
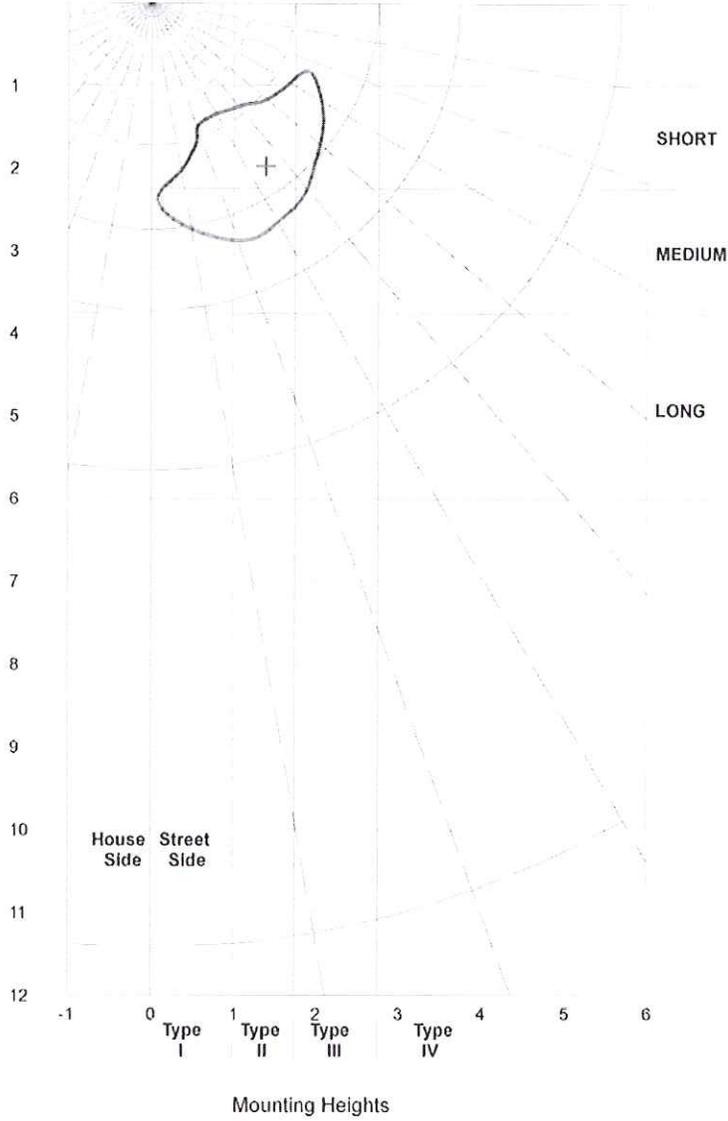
Thursday, February 23, 2012

ROADWAY CLASSIFICATION DIAGRAM

OUTDOOR CU DIAGRAM

Roadway Classification: TYPE III, SHORT

Coefficient of Utilization



Submitted by Lighting Associates, Inc.



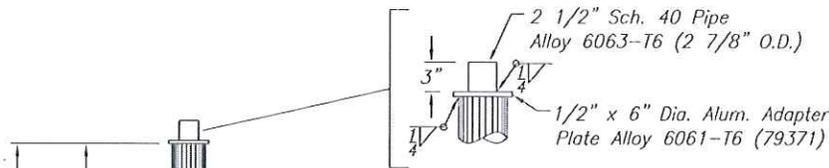
Job Name:
CITY OF SANDY SPRINGS - C-TECH

Catalog Number:
16570-012P**

Type:

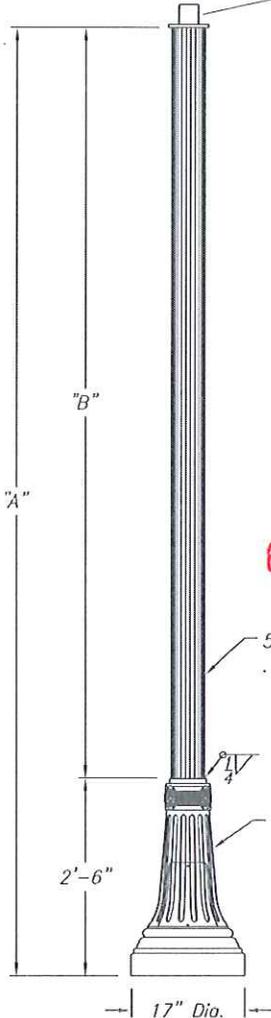
Notes: 12' MH ALUM POLE WITH 5" X .125" STRAIGHT FLUTED SHAFT, YORK BASE, AND STANDARD POWDER

LAH12-12700

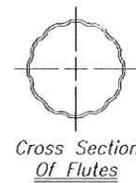


Notes:

- 1) This pole meets the requirements of AASHTO "Standard Specifications for Structural, Luminaires and Traffic Signals", 1994 and 2001 Editions per FHWA acceptance letter LS-64 which can be found at: "http://safety.fhwa.dot.gov/roadway_dept/road_hardware/breakaway/pdf/lb64.pdf"
- 2) Hardware Shall Be "Bagged" For Individual Assemblies.

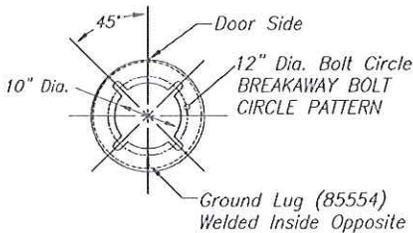
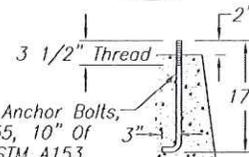
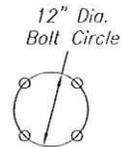


Item No.	"A" Mounting Ht.	"B" Tube Length
16570-010	10'-0"	7'-6"
16570-012	12'-0"	9'-6"
16570-014	14'-0"	11'-6"
16570-016	16'-0"	13'-6"
16570-018	18'-0"	15'-6"
16570-020	20'-0"	17'-6"
16570-008	8'-0"	5'-6"



5" Dia. Fluted Extruded Alum. Tube
.125" Wall Alloy 6063-T6

Decorative Cast Alum. Pedestal Base
Assembly Alloy 356-T6 With Door And
Stainless Steel Screws



- (4) 3/4"-10NC Galv. Stl. Anchor Bolts, AASHTO M314-90 Grade 55, 10" Of Threaded End Galv. Per ASTM A153.
- (4) 3/4"-10NC Galv. Stl. Hex. Nuts
- (4) 3/4" Galv. Stl. Lockwashers
- (4) 3/4" Galv. Stl. Flatwashers

B16570

Ref: 13421

WARNING: DO NOT INSTALL LIGHTING POLES WITHOUT LUMINAIRES

NO.	REVISIONS	DATE
1	Added Note 2 (PRS)	9/09
2	Added -008 (tnb)	12/11
3	Ground Lug Was 41740-002 (tnb)	1/12

hapco
Abingdon, Va.

TITLE YORK SERIES LIGHTING POLES	
CUSTOMER Georgia Power	
SCALE 16	DATE 03/31/2009
BY TNB	DWG. NO.
CHK'D	B16570

DESCRIPTION

The GAR Generation Series provides an updated styling and smooth exterior appearance make it the perfect choice to add a contemporary feel to any setting. Refractive globe provides superior photometrics, maximum pole spacing, excellent roadway illumination and uniformity.

Catalog #	GAR-050-LED-E1-5-C-	Type
Project	C-TECH	
Comments		Date
Prepared by		FEB 2012

SPECIFICATION FEATURES

Construction

HOUSING: Heavy-duty cast aluminum housing and removable door 3.5G vibration tested to ensure strength of construction and longevity in application. A single quarter turn fastener on the removable door provides toolless access to the ballast, terminal block and the optional internally mounted photocontrol receptacle for ease of installation and maintenance. **CAGE ASSEMBLIES:** Cage assembly uprights and medallions are manufactured of heavy-duty cast aluminum and mounted to the exterior of the base housing via four [4] stainless steel fasteners. **TOPS AND FINIALS:** Choose from six [6] spun aluminum or acrylic tops and four [4] cast aluminum finials for customized fixture style. All hard mount tops are made of heavy-duty spun aluminum. Select spun top styles offer top access for toolless entrance into the source compartment. Top and refractive lens are injection molded acrylic. **TWISTLOCK GLOBE:** The optional twistlock assembly offers ease of

maintenance through instant access to the LED module by twisting the top refractor assembly and lifting it from the mating lock plate.

Electrical

LED DRIVER: Assembly mounted to a toolless removable tray with quick disconnects for ease of installation and maintenance. **LED LIGHT ENGINE:** Solid state LED engine provides even and uniform illumination without the pixilation common to LED applications. Thermal management incorporates both conduction and natural convection to transfer heat rapidly away from the LED source and retain optimal efficiency and light output. The LED replacement module is backwards compatible with existing Generation Series luminaire installations enabling retrofit opportunities. 50,000 + hour life with >70% lumen maintenance.

Optical

REFRACTIVE GLOBE: High efficiency refractive optical systems constructed of lighting grade acrylic, or optional polycarbonate. The globes are precisely designed

utilizing a combination of refractive and reflective prisms to create Type III or Type V distributions while maintaining a consistent exterior form. Lighting grade acrylic ensures long lasting optical clarity and resistance to the gradual discoloration that results from exposure to sunlight or UV radiating sources.

Mounting

Base casting slipfits over a standard 3" O.D. tenon and secured via four (4) stainless steel allen head fasteners. 3.5G vibration tested.

Finish

Cast and spun components finished in a 5 stage premium TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Consult the McGraw-Edison Architectural Color brochure for a complete selection of standard colors including black, bronze, grey, white, dark platinum, graphite metallic, and hartford green. RAL and custom color matches available.

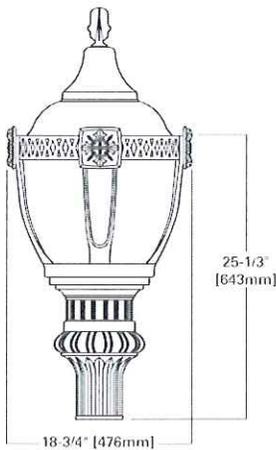


**GAR
GENERATION
SERIES LED**

58W
LED

DECORATIVE POST TOP
LUMINAIRE

DIMENSIONS

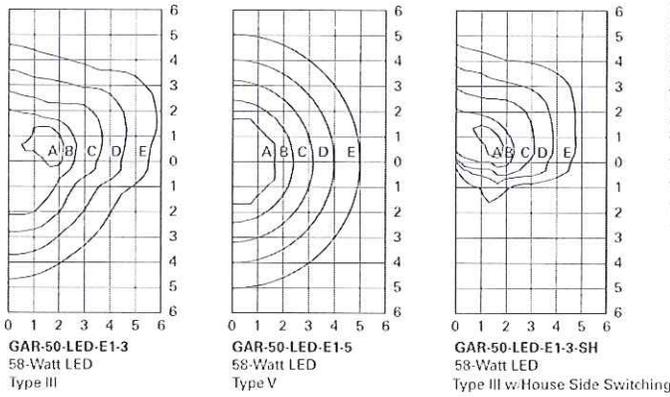


EPA
Effective Projected Area: (Sq. Ft.)
2.1

SHIPPING DATA
Approximate Net Weight:
50 lbs. (23 kgs.)



PHOTOMETRICS



Footcandle Table

Select mounting height and read across for footcandle values of each isofootcandle line. Distance in units of mounting height.

Mounting Height	Footcandle Values for Isofootcandle Lines				
	A	B	C	D	E
10'	1.00	0.50	0.20	0.10	0.05
12'	0.69	0.35	0.14	0.07	0.04
15'	0.44	0.22	0.09	0.05	0.02

LUMEN TABLE

Distribution	Cage	Top	Total Lumens (Full Brightness)	Dimmed Lumens	Street Side/House Side Only
Type III	Classical Cage	Spun Top	2,422	1,211	1,346
Type III	Modern Cage	Spun Top	2,422	1,211	1,346
Type III	Architectural Cage	Spun Top	2,422	1,211	1,346
Type III	No Cage	Spun Top	3,353	1,737	1,794
Type V	Classical Cage	Spun Top	2,342	1,171	1,236
Type V	Modern Cage	Spun Top	2,342	1,171	1,236
Type V	Architectural Cage	Spun Top	2,342	1,171	1,236
Type V	No Cage	Spun Top	3,297	1,699	1,699

ORDERING INFORMATION

Sample Number: GAR-050-LED-E1-3-CXA-BZ

GAR 050 LED E1 5 C C A **

Product Family GAR=Acorn Base	Refractor Type 3=Type III 5=Type V	Cage Type A=Architectural C=Classical M=Modern X=None	Color 1 AP=Grey BZ=Bronze BK=Black GN=Hartford Green WH=White DP=Dark Platinum GM=Graphite Metallic	Options 2 A=Twistlock Refractor B=Decorative Brass Banding ³ P=Polycarbonate Refractor R=NEMA Twistlock Photocontrol Receptacle G=Gold Cage and Finial D=Downlight Reflector HA=50 Degrees C High Ambient Temperature Rating 2L=Two Circuit SH=Street Side/House Side Switching Capable
LED Series 050=050 Series	Top Type A=Acorn C=Classical M=Modern N=Nostalgic (Top Access) R=Architectural (Top Access) V=Victorian	Finial Type A=Architectural M=Modern N=Nostalgic V=Victorian X=None	Accessories 4 MA125: 10kV Circuit Module Replacement GLR-50-E1: 050 Series LED Replacement Module with 120-277 Universal Driver GLR-50-E1-2L: 050 Series LED Replacement Module with 120-277 Universal Driver and BI-Level Switching Capable GLR-50-E1-SH: 050 Series LED Replacement Module with 120-277 Universal Driver and Street Side House Side Switching Capable	** = SPEC COLOR

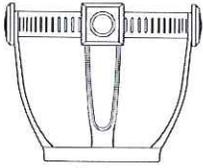
Notes: 1 Other finish colors available, including a full line of RAL color matches. Consult your Cooper Lighting Representative. 2 Add as suffix in the order shown. 3 When brass banding is chosen, finial finished in gold. 4 Order separately.

CONFIGURATIONS

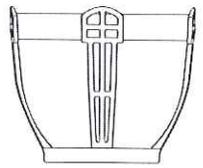
CAGE TYPE



Classical

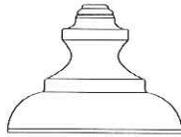


Modern



Architectural

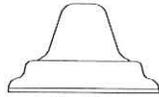
TOP TYPE



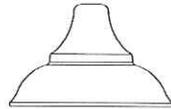
Acorn
(Glow Top)



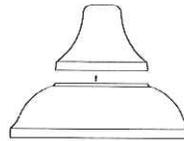
Modern
(Spun Top)



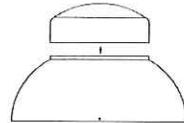
Victorian
(Glow Top)



Classical
(Spun Top)



Nostalgic
(Spun Top / Top Access)



Architectural
(Spun Top / Top Access)

FINIAL TYPE



Architectural



Modern



Victorian



Nostalgic