

118DR99

MEMORANDUM

To George Melara **Date** January 31, 2000
Company Nelsen Architects **Phone No.** 480-949-6800
From Andrew Wilder **FAX No.** 480-949-6801
Project Summit at Scottsdale **Pages + Cover** 1
Project No. DB000 DB000me02

Sending Via FAX Mail Messenger Overnight In-house
The Following Memorandum Phone Record Meeting Notes Note to File

Remarks

George Melara,

This memorandum is in response to the city comments received by Francis Krahe and Associates on January 19, 2000. Each issue is addressed and solved with the attached drawings or documents as this memo states.

City Comments

Comment #1. All building mounted security lighting shall be full cutoff type fixtures, to the satisfaction of City staff.
Response: *Mounted security lighting is full cutoff type fixtures. Light from these fixtures can only be emitted below 0 degrees horizontal. Please see the attached specifications and cut-sheets for more information. Security and egress lighting are types SC, SC-1, SG, and SJ.*

Comment #2. The applicant shall provide a revised photometric point-by-point analysis which includes:

2.1 A vertical footcandle (FC) reading of 1.9 meters above grade around the perimeter of the entire property, at the property line as set forth in the IESNA publication, "RP-33 Lighting for Exterior Environments"

Response: *Please see drawing AL-101b for the footcandle reading 1.9 meters above grade.*

2.2 A summary section with the following information:

2.2.1 Maintained average horizontal footcandle at grade for the parking lot

2.2.2 Maintained maximum horizontal FC at grade in the parking lot.

2.2.3 Maintained minimum horizontal FC at grade in the parking lot.

2.2.4 Maximum : minimum uniformity ratio at grade for the parking lot.

Response: *Please see drawing AL-101a for the calculation summary.*

Comment #3. Provide manufacturer cut-sheets, including full catalog numbers, for luminaire types: SA, SA-1, SA-2 and SB for staff review and approval.

Response: *Please see attached specifications and cut-sheets.*

- | | |
|--|---|
| <input checked="" type="checkbox"/> 580 Broadway
Suite 100
Laguna Beach, CA 92651
USA
(949) 376-0744
(949) 376-0747 FAX | <input type="checkbox"/> 425 Bush Street
Suite 204
San Francisco, CA 94108
USA
(415) 834-1903
(415) 834-1904 FAX |
|--|---|

MEMORANDUM

Comment #4. Use of the Kastrup luminaire requires separate approval. The applicant shall submit an electronic or hard copy photometric file for the Kastrup luminaire, listing a summary of the candelas in 5 degree increments, from 0 - 180 degrees.

Response: The Kastrup luminaire has been replaced by a Teka luminaire. Photometric data is provided with the specifications and candela curve is located on drawing AL-1.

Comment #1. If lighting is proposed for the two driveways on the west side of the project, it shall be included in the above mentioned point-by-point analysis.

Response: Lighting is not proposed for the two driveways on the west side. No action required.

Comment #2. The lighting plan calls out for a 15-foot pole. A maximum of 16-foot pole is allowed, as measured from grade to bottom of luminaire.

Response: All luminaires listed with 15-foot pole are specified 15 feet from grade to bottom of luminaire. No action required.

If you have any questions or comments, please do not hesitate to call or email at your earliest convenience.

Regards,
FRANCIS KRAHE & ASSOCIATES, INC.
Andrew Wilder

www.fkaid.com
Office: 949.376.0744
Fax: 949.376.0747

cc: Mark Whitfield

LIGHTING FIXTURE SUMMARY

-
1. TYPE SA DOUBLE HEAD AREA LIGHT
 - Mounting: Provide structural concrete foundations with anchor bolts and base plate as required.
 - Housing: One piece spun aluminum, custom paint color per architect's specification; UL approved for wet location.
 - Pole: 15'-0" mounting height ,on tapered/straight aluminum pole, painted finish, custom color; custom aluminum base, with access door.
 - Lens: Flat, tempered glass lens.
 - Reflector: Faceted aluminum reflector
 - Lamp: (2) C250S50/C, ED-18 Bulb, Mog. Base, 23000 initial lumens, 2200 K, 65 CRI, 15000 hours, by Philips
 - Ballast: Integral, provide ballast type as required for specified lamp, voltage as required.
 - Manufacturer: Gardco MA-22-2-3-250HPS-voltage per engineer-finish by architect.

 2. TYPE SA-1 SINGLE HEAD AREA LIGHT
 - Mounting: Provide structural concrete foundations with anchor bolts and base plate as required.
 - Housing: One piece spun aluminum, custom paint color per architect's specification; UL approved for wet location.
 - Pole: 15'-0" mounting height ,on tapered/straight aluminum pole, painted finish, custom color; custom aluminum base, with access door.
 - Lens: Flat, tempered glass lens.
 - Reflector: Faceted aluminum reflector
 - Lamp: (1) C250S50/C, ED-18 Bulb, Mog. Base, 23000 initial lumens, 2200 K, 65 CRI, 15000 hours, by Philips
 - Ballast: Integral, provide ballast type as required for specified lamp, voltage as required.
 - Manufacturer: Gardco MA-22-1-3-250HPS-voltage per engineer-finish by architect.

 3. TYPE SA-2 SINGLE HEAD AREA LIGHT
 - Mounting: Provide structural concrete foundations with anchor bolts and base plate as required.
 - Housing: One piece spun aluminum, custom paint color per architect's specification; UL approved for wet location.
 - Pole: 15'-0" mounting height ,on tapered/straight aluminum pole, painted finish, custom color; custom aluminum base, with access door.
 - Lens: Flat, tempered glass lens.
 - Shield: Custom shield to be installed.
 - Reflector: Faceted aluminum reflector
 - Lamp: (1) C250S50/C, ED-18 Bulb, Mog. Base, 23000 initial lumens, 2200 K, 65 CRI, 15000 hours, by Philips
 - Ballast: Integral, provide ballast type as required for specified lamp, voltage as required.
 - Manufacturer: Gardco MA-22-1-3-250HPS-voltage per engineer-finish by architect.

 4. TYPE SB: ENTRANCE POLE
 - Housing: Cast bronze top, heavy pure copper shade with rolled edge, cast bronze lower housing, clear glass cylinder, and pure copper lampholder cover.
 - Pole: 10'-0" mounting height, on tapered/straight aluminum pole, painted finish, custom color; custom aluminum base, with access door.
 - Reflector: Spun copper reflector.
 - Lamp: (1) C150S55/C/M, ED-17 Bulb, Med. Base, 12000 lumens, 2200 K, 60 CRI, 15000 hours, by Philips.
 - Manufacturer: TEKA LBP-2316/Natural

LIGHTING FIXTURE SUMMARY

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5. TYPE SB-1: ENTRANCE POLE
Housing: Cast bronze top, heavy pure copper shade with rolled edge, cast bronze lower housing, clear glass cylinder, and pure copper lampholder cover. Top of housing is opaque, allowing no light to be emitted upward.
Pole: 10'-0" mounting height, on tapered/straight aluminum pole, painted finish, custom color; custom aluminum base, with access door.
Reflector: Spun copper reflector.
Lamp: (1) C150S55/C/M, ED-17 Bulb, Med. Base, 12000 lumens, 2200 K, 60 CRI, 15000 hours, by Philips.
Manufacturer: TEKA LBP-2316/Natural
6. TYPE SC WALL MOUNTED WALLPAK
Mounting: Wall mounted cutoff luminaire for high intensity discharge lamps/ballasts. Housing mounts flush to the building surface. Fixture to be mounted 15'-0" A.F.G.
Housing: A single piece soft trapezoidal shape in die cast aluminum. Back plate is die cast aluminum with integral fins to create a cooling surface behind the housing.
Lens: Specular, extruded, faceted aluminum components, electro polished, anodized and surface sealed.
Lamp: (1) 150 watt, C150S55/C/M, ED-17 Bulb, Med. Base, 12000 lumens, 2200 K, 60 CRI, 15000 hours, by Philips.
Ballast: High power factor ballasts of the separate component type capable of providing reliable lamp starting to -20 deg. F. Component-to-component wiring within the luminaire will carry no more than 80% of rated current. High pressure sodium ballast operate with ANSI trapezoidal limits.
Manufacturer: McPhilbin-Outdoor 104-FT-150HPS-120/277v-BLP
7. TYPE SC-1 WALL MOUNTED WALLPAK
Housing: Single piece die cast aluminum. Downlight only products have fully cast tops. Memory retentive gasket seals housing with door frame to exclude moisture, dust, insects and pollutants.
Ballast: High Pressure Sodium ballasts operate lamps within ANSI trapezoidal limits.
Lamp: (1) 70 watt, C70S62/M, ED-17 bulb, Med. Base, 2100 K color temperature, 6300 initial lumens, 21 CRI, by Philips.
Manufacturer: McPhilben #106-WT-70HPS-120/277v-BLP
8. TYPE SC-2 WALL MOUNTED WALLPAK
Housing: One piece die cast aluminum supplied with universal mounting bracket for direct attachment to 3 1/2" or 4" octagonal wiring box.
Ballast: Compact fluorescent are magnetic HPF available in 120 volt or 277 volt. Voltage per Electrical Engineer.
Lamp: (1) 26 watt compact fluorescent, PL-C 26W/30, 3000 K color temperature, 10,000 hour life, 1510 lumens, 82 CRI, by Philips.
Manufacturer: Bega #3181P
9. TYPE SE MOUNTED DOWNLIGHT
Mounting: Universal knuckle for wall, ground, or ceiling mount. Permits 358 degree rotation and more than 90 degree aiming.
Lamp: (1) 50 watt Metal Halide, MH50/U/M, 4300 K color temperature, 6000 hour life, 3200 initial lumens, 65 CRI, by Philips.
Manufacturer: McPhilben #300-E-K-C-50MH-120/277v-BLP

LIGHTING FIXTURE SUMMARY

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10. TYPE SG WALL MOUNTED EGRESS LIGHT
Housing: Constructed of die cast aluminum with integral wiring compartment.
Ballast: Magnetic HPF. Available in 120 volt or 277 volt. Voltage by Electrical Engineer.
Lamp: (1) 70 watt Metal Halide, MHC70/u/m/4K, 4000 K color temperature, 15,000 hour life, 5800 initial lumens, 92 CRI, by Philips.
Manufacturer: Bega #2928MH
11. TYPE SH COLD CATHODE
NOTE: This item requires exact field dimensions for fabrication.
Housing: Heavy duty composite construction with structural mounting channels. Coordinate with Architect for more information.
Transformer: Located in access panel, mount on sound absorbing neoprene gaskets to structure, primary voltage 120V. Refer to section "2.K", TRANSFORMERS - (Incandescent, Cold Cathode, Neon) for more information. 6.5 w/lf: 1" diameter, warm white Triphosphor 3000 K by Philips - ADVANTAGE X, in lengths and patterns as shown on drawings. Provide standardized lengths where possible. Contractor shall provide 10% spare lamps. Provide shop drawings prior to fabrication of all cold cathode for review by Francis Krahe & Associates, based upon exact field dimensions.
Lamp: Cast Porcelain sockets, sealed and gasketed, continuous lengths as shown on drawings: see architectural details.
Manufacturer: National Cathode Inc.
Equal: Architectural Cathode Lighting Inc.
12. TYPE SJ WALL MOUNTED EGRESS LIGHT
Housing: Constructed of die cast and extruded aluminum with integral wiring compartment. Mounting tabs provided.
Ballast: Magnetic HPF, 120 volt or 277 volt. Voltage by Electrical Engineer.
Lamp: (1) 13 watt compact fluorescent, PL-C 13W/30, 3000 K color temperature, 10,000 hour life, 1800 initial lumens, 82 CRI, by Philips.
Manufacturer: Bega #2286P
13. TYPE SK RECESSED IN-GRADE UPLIGHT
Housing: High temperature composite UV resistant w/ integral junction box to be used with potting compound. Shield: Internal directional louver accessory #IDL to be provided with fixture.
Ballast: Integral, HPF ballast enclosed in polyester resin. Voltage per Electrical Engineer.
Lamp: (1) 70 watt ED-17 Metal Halide, MHC70/U/M/4K, 4000K color temp., 15,000 hour life, 6000 lumens, 92 CRI, by Philips.
Manufacturer: Bronzelite #GMA 670-MH-SP-120/277-SRL-LA-CMF-IDL
14. TYPE SL STRING LIGHTS
Mounting: String lights can be cut to custom lengths between buildings.
Transformer: Transformer and enclosure is U.L. Listed. Part # C1-250 TB-101(a)
Lamp: Part # SL-101, 24 volts, 0.96 watts, 2.2 lumens, 2200 K color temperature, 12,000 hour life, by Tokiastar Lighting
Manufacturer: Tokiastar Lighting SL WG-12

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Francis Krahe
& Associates Inc.

LIGHTING FIXTURE SUMMARY

3.5.2 CUSTOM FIXTURES

15. TYPE CA DECORATIVE WALL MOUNTED UP/DOWN LIGHT
Housing: Copper formed shroud, patina finish
Lamp: (2) 90 watt PAR38 Halogen, 90/PAR/28/HAL/FL28/LL, 130 voltage, 2500 hours, 1280 lumens, by Philips.
Manufacturer: Michael's Lighting

FIXTURE TYPE SA, SA-1 (1 of 2)



**HARDTOP
CA/MA ARM MOUNT**



GENERAL DESCRIPTION: The Gardco Round arm mounted Form 10 products are cylindrical (CA) or semi-spherical (MA) sharp cutoff luminaires using high intensity discharge lamps up to 750 watts (400w in the MA). Housings are one piece seamless spun aluminum and finished with either Architectural Class 1 anodizing or electrostatically applied polyurethane. Luminaires can accept one of six (6) interchangeable and rotatable precision segmented optical systems.

ORDERING

HOUSING	DIAMETER	CONFIGURATION	DISTRIBUTION	WATTAGE	VOLTAGE	FINISH	OPTIONS
CA	17"	1	3	250MH	120	BFA	HF
CA	17"	1	1 (Horizontal Lamp)	SEE TABLE	120	BLA	HS
MA	22"	1	3 (Horizontal Lamp)	BELOW	208	BRA	HF
		2	4X (Horizontal Lamp)		240	NA	LF
		2	4X (Horizontal Lamp)		277	BLP	MF
		3	Q (Horizontal Lamp)		347	BRP	PC
		3	Q (Horizontal Lamp)		480	NP	PCR
		4	FM (Horizontal Lamp)		QUAD	WP	POLY
		4	VS (Vertical Lamp)			SC	AP
							AT
							SG
							QS
							PTF

WATTAGE	OPTIONS	FINISH
housing CA17 MA17 CA22 MA22	HS Internal House Side Shield	BLA Black Anodized
100 HPS 100 HPS 250 HPS 250 HPS	HF In-Head Fusing	BRA Bronze Anodized
100 MV 100 MV 250 MV 250 MV	LF In-Line Fusing	NA Natural Anodized
50 MH 50 MH 250 MH 250 MH	MF Mast Arm Filter (CA only)	BRP Bronze Paint
70 MH 70 MH 400 HPS 400 HPS	PC Receptacle and Photocontrol*	BLP Black Paint
100 MH 100 MH 400 MV 400 MV	PCR Photocontrol Receptacle only	NP Natural Aluminum Paint
150 HPS 150 HPS 400 MH 400 MH	POLY Polycarbonate Sag Lens in lieu of Glass ¹	WP White Paint
175 MV 175 MV 750 HPS	SG Sag Glass	SC Special Color Paint
175 MH 175 MH 750 MH	(Supplied standard with Type 4X optics and CA22 750w luminaires)	
250 MV	AP Adjustable Knuckle - Pole Mount	
250 MH	AT Adjustable Knuckle Fenon Mount	
	QS Quartz Restrike	
	PTF Pole Top Filter	

NOTES

- Furnished with acrylic sag lens. VS not available with 17" mogul base
- Medium base lamo
- 150HPS ballast operates 55 volt lamp
- Not available in MA units or 480V 1000w max
- 175W max on 17" units
- Available with 22" units only
- Furnished with sag glass lens
- Not available with Type 4X
- Contact factory for availability

2661 Avenida Street
San Leandro, CA 94577
U.S. 800/227-0758
CA 510/357-6900
FAX 510/357-3088
<http://www.thomaslighting.com>



FIXTURE TYPE SA, SA-1 (2 of 2)

Photometric Report (Type C)

Filename: Grq15h.ies

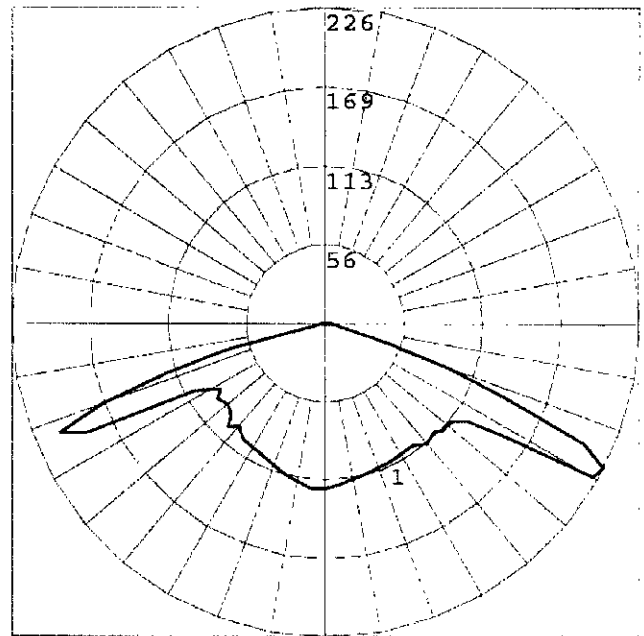
Maximum Candela = 225.8 at 0 H 62.5 V

Classification:

Road Classification: Type III, Very Short, Cutoff
Indoor Classification: Direct

Polar Candela Curves:

Vertical Plane Through:
1) 0 - 180 Horizontal



AG112/Photometric Report Generator copyright 1998 by Lighting Analysts, Inc.



FIXTURE TYPE SA-2 (1 of 2)



HARDTOP CA/MA ARM MOUNT



GENERAL DESCRIPTION: The Gardco Round arm mounted Form 10 products are cylindrical (CA) or semi-spherical (MA) sharp cutoff luminaires using high intensity discharge lamps up to 750 watts (400w in the MA). Housings are one piece seamless spun aluminum and finished with either Architectural Class 1 anodizing or electrostatically applied polyurethane. Luminaires can accept one of six (6) interchangeable and rotatable precision segmented optical systems.

ORDERING

HOUSING	DIAMETER	CONFIGURATION	DISTRIBUTION	WATTAGE	VOLTAGE	FINISH	OPTIONS
CA	17"	1	3	250MH	120	BRA	HF
CA	17"	1	1 (Horizontal Lamp)	SEE TABLE BELOW	120	BLA	HS
MA	22"	1	3 (Horizontal Lamp)		208	BRA	HF
		2	4X (Horizontal Lamp)		240	NA	LF
		2	4X (Horizontal Lamp)		277	BLP	MF
		3	Q (Horizontal Lamp)		347	BRP	PC
		3	Q (Horizontal Lamp)		480	NP	PCR
		4	FM (Horizontal Lamp)		QUAD	WP	POLY
		4	VS (Vertical Lamp)			SC	AP
							AT
							SG
							QS
							PTF

TYPE	HOUSING	DIAMETER	CONFIGURATION	DISTRIBUTION	WATTAGE	VOLTAGE	FINISH	OPTIONS
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WATTAGE	OPTIONS				FINISH		
Housing	CA17	MA17	CA22	MA22	HS	Internal House Side Shield	BLA Black Anodized
100 HPS	100 HPS	250 HPS	250 HPS	HF	In-Head Fusing	BRA Bronze Anodized	
100 MV	100 MV	250 MV	250 MV	LF	In-Line Fusing	NA Natural Anodized	
50 MH	50 MH	250 MH	250 MH	MF	Mid Arm Filter (CA only)	BRP Bronze Paint	
70 MH	70 MH	400 HPS	400 HPS	PC	Receptacle and Photocontrol	BLP Black Paint	
100 MH	100 MH	400 MV	400 MV	PCR	Photocontrol Receptacle only	NP Natural Aluminum Paint	
150 HPS	150 HPS	400 MH	400 MH	POLY	Polycarbonate Sag Lens in lieu of Glass	WP White Paint	
175 MV	175 MV	750 HPS		SG	Sag Glass	SC Special Color Paint	
175 MH	175 MH	750 MH			(Supplied standard with Type 4X optics and CA22 750w Luminaires)		
250 MV				AP	Adjustable Knuckle - Pole Mount		
250 MH				AT	Adjustable Knuckle - Tenon Mount		
				QS	Quartz Restrike		
				PTF	Pole Top Filter		

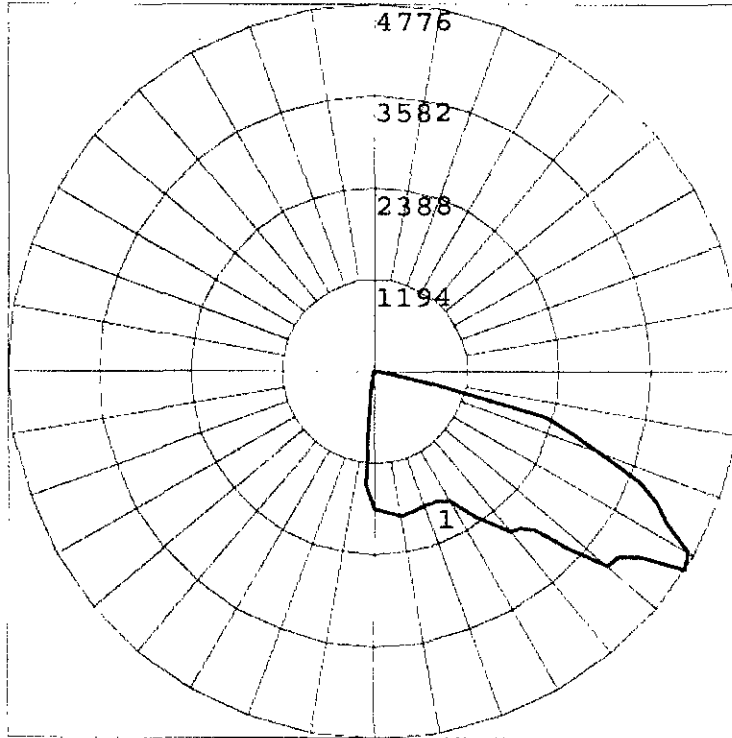
NOTES

- Furnished with acrylic sag lens. VS not available with 17" mogul base
- Medium base lamp
- 150HPS ballast operates 55 volt lamp
- Not available in MA units or 480V 1000w max
- 175W max on 17" units
- Available with 22" units only
- Furnished with sag glass lens
- Not available with Type 4X
- Contact factory for availability

2661 Alvarado Street
San Leandro, CA 94577
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CA 510/357-6900
FAX 510/357-3088
<http://www.thomasignng.com>

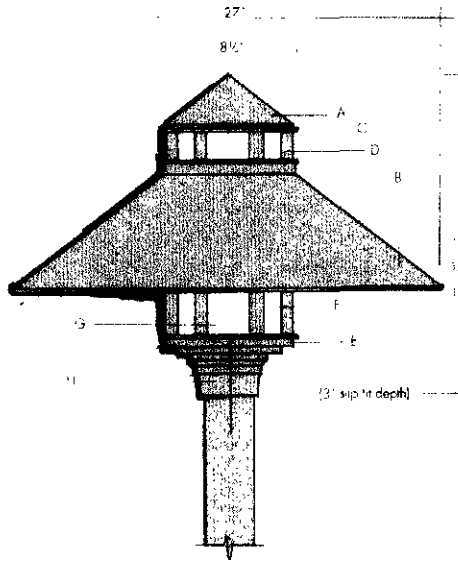


FIXTURE TYPE SA-2 (2 of 2)





FIXTURE TYPE SB



The color illustration on the front of our TEKA LBP 2346/Natural shown mounted to an 8", tapered aluminum pole finished with a custom bronze powder coat paint. TEKA offers a variety of straight and stepped poles in copper, stainless steel and galvanized steel as well. Consult your TEKA Representative for more details.

The task of developing an outdoor lighting scheme does not end with determining luminaire spacing and height.

The shade geometry and etched diffuser of the TEKA LBP series luminaires serve to diffuse and disperse the bare lamp intensity over the combined area of the shade and diffuser.

The result is a pleasing soft light and a reduction in brightness.

More than spacing criteria, brightness determines whether a luminaire is suitable for walkways and streetscapes that require "friendly" lighting. By friendly lighting we mean low brightness controlled illumination.

Brightness, or average illuminance, is defined as light intensity (candelas) per unit of area (square meter). As a point of reference, the brightness of a candle is 10,000 cd/m².

The brightness of a bare 100W Metal Halide lamp arc tube is 9,200,000 cd/m².

Brightness values for the 100W Metal Halide TEKA LBP are listed below.

Angle in Degrees pole base = 0°	Candela per sq. meter
35°	2272
45°	2350
55°	2873
65°	3919
75°	1258
80°	831

Report Number: 0148043
Date: 09/01/98
Prepared For: TEKA ILLUMINATION INC.
Catalog Number: LBP-2347 100W E/LBP-2317 100W E
Luminaire: Spun copper reflector, cast metal
 cast top filter suspended from six
 posts. Cast metal top piece
 1.687" above top of reflector.
 Frosted cylindrical glass diffuser.
Lamp: One 100-watt, E-17 Metal
 Halide, vertical base-down position.
Mounting Height: 10 ft.
 Report based on 8500 lumens per lamp.

Description... Exterior pole mounted luminaire

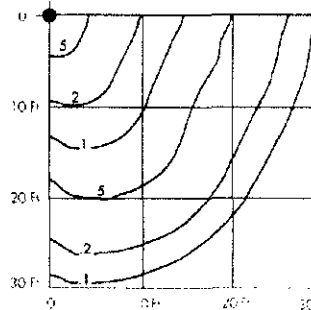
Material/Construction...

- A Cast bronze cap
- B Heavy pure copper shade with rolled edges
- C Stainless steel or copper or S.S. ring baffles .135" thick
- D Brass spacers .875" diameter
- E Cast bronze lower housing, suit. 3" or 3 1/2" slip fitter
- F Clear glass cylinder .97" thick
- G Pure copper lampholder cover
- H Stainless steel set screws

Mounting... Specify 3" O.D. pole top/terrac or 3 1/2" O.D. (for 3" copper fitting)

Ratings... U.L. listed for wet locations

Product #	Lamp	Rings	Finish Option
LBP-2346/Natural	150W A21	S.S.	Brown Patina
LBP-2316/Natural	150W A21	Copper	Brown Patina
LBP-2347/Natural	100W E-17 MH	S.S.	Brown Patina
LBP-2317/Natural	100W E-17 MH	Copper	Brown Patina
LBP-2344/Natural	42W FIT	S.S.	Brown Patina
LBP-2314 /Natural	42W FLI	Copper	Brown Patina



For foot candle values on pole heights greater than 10 ft., use the following factors:
 12 ft. multiplier = .69
 14 ft. multiplier = .57

FIXTURE TYPE SB (Part 2 of 2)

Photometric Report (Type C)

Filename: Itl48043.ies
[TEST] ITL48043
[DATE] 09/01/98
[MANUFAC] TEKA ILLUMINATION INC.
[LUMCAT] LBP-2346-100MH/LBP-2316-100MH
[LUMINAIRE] SPUN COPPER REFLECTOR, CAST METAL POST TOP FITTER SUSPENDED FROM SIX COPPER
[LAMP] ONE 100-WATT CLEAR ED-17 METAL HALIDE, VERTICAL BASE-DOWN POSITION.

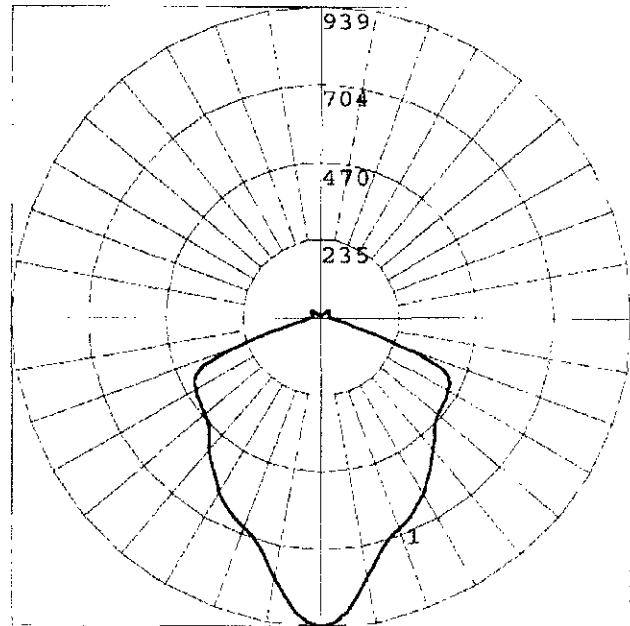
Maximum Candela = 939 at 0 H 0 V

Classification:

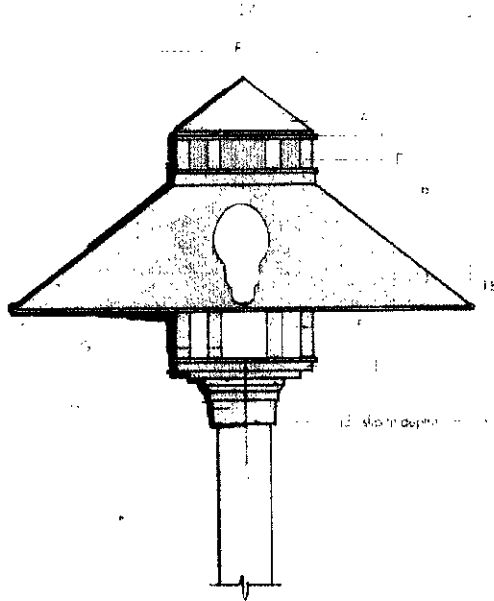
Road Classification: Type III, Very Short, Cutoff
Indoor Classification: Direct

Polar Candela Curves:

Vertical Plane Through:
1) 0 - 180 Horizontal



FIXTURE TYPE SB-1 (Part 1 of 2)



The pole mounting arm (part D) is per TEKA BRP 2344. The pole shown mounted to a 8" tapered aluminum pole finished with a custom bronze powder coat per TEKA color system. The pole and stepped poles in copper, stainless steel and galvanized steel as well. Consult your TEKA Representative for more details.

The ease of re-wiring for outdoor lighting is enhanced by the use of wire with determining luminaire spacing and height.

The shade geometry and etched surface of the TEKA BRP luminaire allows for the diffusion of light from the base lamp directly over the luminaire pole to the ground surface.

The fixture is a bearing self-light and is designed for 10000 hrs. More than spacing criteria, progress determine luminaire mounting is suitable for walkways and streetscapes that utilize street lighting. By means of light we mean low maintenance controlled illumination.

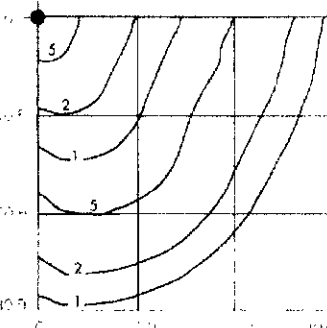
Brightness or average illuminance is defined as light power (candelas) per unit of area square meter. An example is to compare the brightness of a candle to 10000 lumens. The brightness of a bare 100W 7.62m (25ft) incandescent lamp is 2000 CD/m².

Brightness values for the 100W Model Name TEKA BRP luminaire below:

Angle in degrees (pole base to top)	Lumens per sq. meter
37	1272
45	1800
50	2875
55	3410
60	418

Report Number: 008043
Date: 09/11/98
Prepared For: TEKA ILLUMINATION INC.
Catalog Number: BRP 2344 - 00001 - 10000 hrs. 100W
Luminaire: Spire luminaire for low voltage post top. The luminaire is a custom cast metal top piece. 067 globe top of stainless steel. Direct sunlight surface.
Lamp: One 100 watt base E17 100W incandescent bulb. Low voltage.

Mounting Height: Report based on 2000' mounting height.



Each luminaire is shown with a 12 ft. mounting height. Use the following table to determine mounting height.

- Description:** Exterior pole mounted luminaire
- Material/Construction:**
- A. Cast bronze cap
 - B. Heavy pure copper shade with round edges
 - C. Stainless steel in copper or mounting holes .25 thick
 - D. Brass spacer .875 diameter
 - E. Cast bronze lower housing with 3/8" brass slipfit
 - F. Clear glass cylinder - 1.97 thick
- Etched glass supplied for metal halide and fluorescent models.
- G. Pure copper ornamental cover
 - H. Stainless steel set screws
- Mounting:** Spire 3" O.D. post top arm 1.31" O.D. E17 copper fitting
- Ratings:** Listed for use as up to:
- | Product # | Wattage | Rating | Finish Option |
|------------------|-------------|--------|---------------|
| BRP 2344/Natural | 100W A21 | S.S. | Brown Patina |
| BRP 2344/Natural | 150W A21 | Copper | Brown Patina |
| BRP 2344/Natural | 100W E17 MR | S.S. | Brown Patina |
| BRP 2344/Natural | 100W E17 MR | Copper | Brown Patina |
| BRP 2344/Natural | 42W E17 | S.S. | Brown Patina |
| BRP 2344/Natural | 42W E17 | Copper | Brown Patina |

FIXTURE TYPE SB-1 (Part 2 of 2)

Photometric Report (Type C)

Filename: ITL48043 - Custom.IES
[TEST] ITL48043
[DATE] 09/01/98
[MANUFAC] TEKA ILLUMINATION INC.
[LUMCAT] LBP-2346-100MH/LBP-2316-100MH
[LUMINAIRE] SPUN COPPER REFLECTOR, CAST METAL POST TOP FITTER SUSPENDED FROM SIX COPPER P
[LAMP] ONE 100-WATT CLEAR ED-17 METAL HALIDE, VERTICAL BASE-DOWN POSITION.

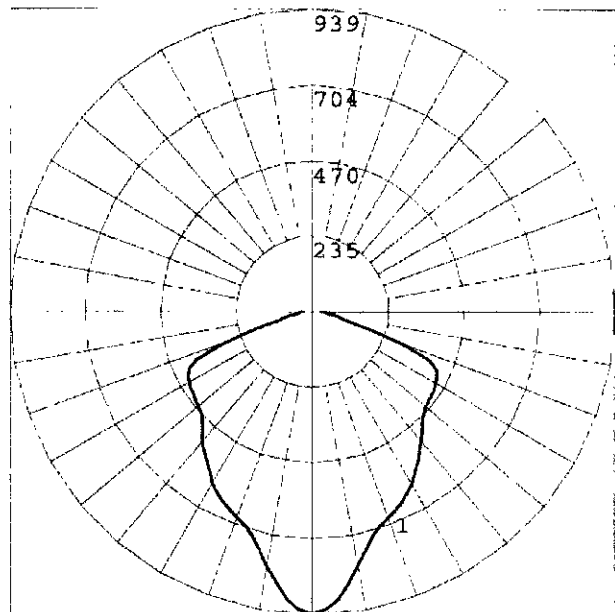
Maximum Candela = 939 at 0 H 0 V

Classification:

Road Classification: Type III, Very Short, Cutoff
Indoor Classification: Direct

Polar Candela Curves:

Vertical Plane Through:
1) 0 - 180 Horizontal



FIXTURE TYPE SC (Part 1 of 2)



104

LUMINAIRE

height: 7"
width: 18"
depth: 9"

DISTRIBUTION

FT = Forward Throw Downlight
(Not available with fluorescent)
WT = Wide Throw Downlight
(Not available with fluorescent)
MT = Medium Throw Downlight

WATTAGE	VOLTAGE	FINISH	OPTIONS	
35 HPS (120V only)	120V	BRP Bronze Paint	F = Single Fuse (120V, 277V) PCB = Button Type Photocell (n/a 105)	
50 HPS	277V	BLP Black Paint	QR = Quartz Restrike (Not available with FT or MT distributions on 103-106)	
70 HPS	347V (HID only)	WP White Paint	QEM = Emergency Quartz Socket (DC Bayonette) (Not available with FT or MT distributions on 103-106)	
100 HPS		NP Natural Paint	SL = Solite® Diffusing Lens (For daytime obscuring of optical system and lamp. Can reduce spacing capability of sconces)	
150 HPS	120V only	BGP Beige Paint	UT = 5° Uptilt for FT Optics	
50 MH		SC Special Color (optional, specify)	WLU = Wet Location Door for Inverted (101/102 only)	
70 MH			WS = Wall Mount, Surface Conduit	
100 MH				
150 MH				
175 MH				
200 MH				
(1) 26 QF (Quad Tube Fluorescent)				
(2) 26 QF (Quad Tube Fluorescent)				
(2) 26 QF-DIM* (120V only)				
(1) 42 TRF (Triple Tube Fluorescent)				
(1) 42 TRF-DIM* (120V only)				
35 - 150 HPS	120V only		*Recommended Dimmer Controls	
50 - 70 MH	120V, 277V		Lutron:	
100 - 150 MH	277V only		SELV-300-WH 300W	
(1) 42 TRF	120V, 277V		NTELV-300-WH 300W	
(1) 42 TRF-DIM*	120V		LTELV-303P 300W	
			NELV-450-WH 450W	
			ELV11000 plus 1000W	
			AYF-103P-WH	

FIXTURE TYPE SC (Part 2 of 2)

Photometric Report (Type C)

Filename: M1f25h.ies

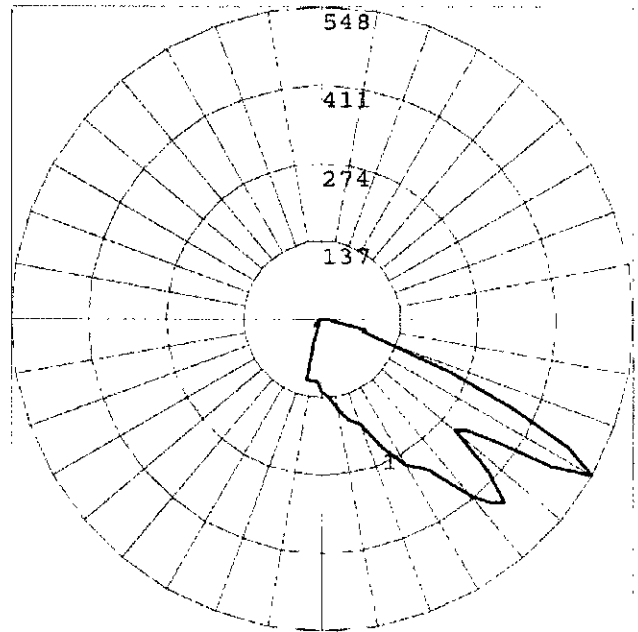
Maximum Candela = 547.7 at 5 H 60 V

Classification:

Road Classification: Type III, Very Short, Cutoff
Indoor Classification: Direct

Polar Candela Curves:

Vertical Plane Through:
1) 5 - 185 Horizontal



FIXTURE TYPE SC-1 (Part 1 of 2)



106

height: 9.125"
width: 18"
depth: 9"

WT = Wide Throw Downlight
(Not available with fluorescent)

MT = Medium Throw Downlight

WATTAGE	VOLTAGE	FINISH	OPTIONS
35 HPS (120V only)	120V	BRP Bronze Paint	F = Single Fuse (120V, 277V)
50 HPS	277V	BLP Black Paint	PCB = Button Type Photocell (n/a 105)
70 HPS			QR = Quartz Restrike (Not available with FT or MT distributions on 103-106)
100 HPS	347V (HID only)	WP White Paint	QEM = Emergency Quartz Socket (DC Bayonette) (Not available with FT or MT distributions on 103-106)
150 HPS		NP Natural Paint	
50 MH		BGP Beige Paint	SL = Solite [®] Diffusing Lens (For daytime obscuring of optical system and lamp. Can reduce spacing capability of sconces)
70 MH			UT = 5° Uptilt for FT Optics
100 MH		SC Special Color (optional, specify)	WLU = Wet Location Door for Inverted (101/102 only)
150 MH			WS = Wall Mount, Surface Conduit
175 MH			
200 MH			
(1) 26 QF (Quad Tube Fluorescent)			
(2) 26 QF (Quad Tube Fluorescent)			
(2) 26 QF-DIM* (120V only)			
(1) 42 TRF (Triple Tube Fluorescent)			
(1) 42 TRF-DIM* (120V only)			

***Recommended Dimmer Controls**

FIXTURE TYPE SC-1 (Part 2 of 2)

Photometric Report (Type C)

Filename: M1f15h.ies

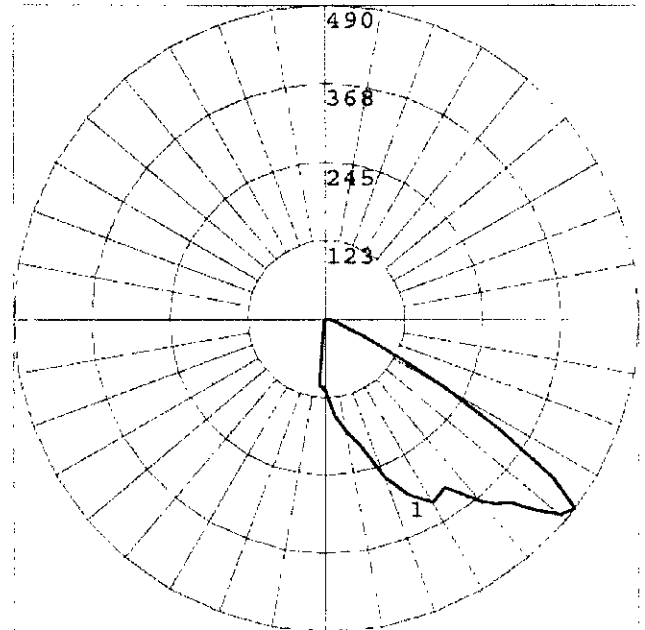
Maximum Candela = 490.4 at 5 H 52.5 V

Classification:

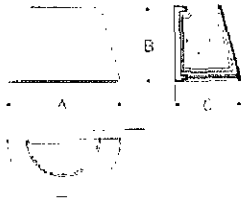
Road Classification: Type II, Very Short, Cutoff
Indoor Classification: Direct

Polar Candela Curves:

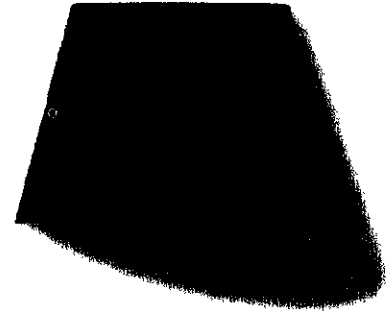
Vertical Plane Through:
1) 5 - 185 Horizontal



FIXTURE TYPE SC-2



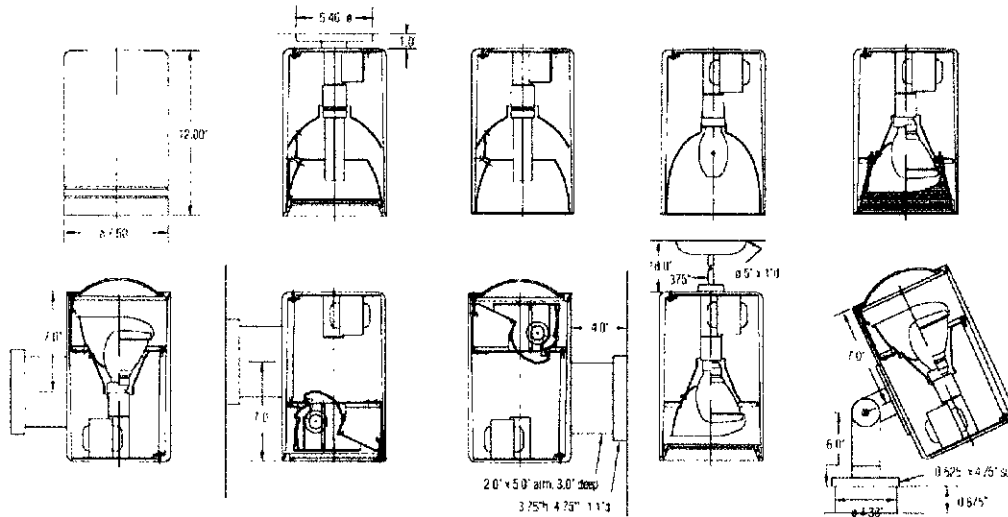
Wall mounted sconces for direct/indirect illumination from a fully shielded light source. One piece, three-ply opal glass diffuser. Color: Black or white.



		Lamp	Lumen	A	B	C
3178	Wall	1 60W A-19	890	10 1/4"	6 1/4"	5 1/2"
3179P	Wall	1 13W PLC	860	10 1/2"	6 1/8"	5 7/8"
3180	Wall	1 100W A-19	1750	13 1/4"	9 1/4"	7 1/4"
3181P	Wall	1 26W PLC	1800	13 3/4"	9 3/4"	7 1/2"



FIXTURE TYPE SE DIMENSIONS



ORDERING

PREFIX	MODEL	MOUNTING	TRIM	LAMP	VOLTAGE	FINISH	OPTIONS	
300	O	C	R	50HPS	120	BRP	F	
300	O Open Downlight	C Ceiling P Pendant W Wall	R Reflector B Baffle (Black)	E-17 50HPS R40 or PAR38 70HPS 100HPS	Fluo* 26F 26F 32F 42F	120 277	BRP Bronze Paint BLP Black Paint WP White Paint NP Natural Aluminum Paint BGP Beige Paint VP Verde Green Paint SC Special Color Paint (specify)	LF In-Line GLR Fuse PCB Button Type Photocell (Wall Mount only) DM Fluorescent Dimming (42F only 120V only)
	O Downlight Enclosed	C Ceiling P Pendant W Wall	L Lens (Some) LL Lens (Some) with Louver	R70MH R100MH Incandescent 254 PAR38 (max) 300 R40 (max)				
	U Uplight Enclosed	W Wall						
	E Enclosed Universal	K Knuckle	C Lens-Clear Convex					
300	U Uplight Enclosed	W Wall	FT/C Lens, Clear Convex with Forward Throw Reflector	16 Lamp T70MH				
<i>Forward Throw Optics</i>	O Downlight Enclosed	C Ceiling P Pendant W Wall	FT/D Lens, Clear Flat with Forward Throw Reflector	16 Lamp T70MH				

Mounting location, direction, optics and trim selection have an impact on lamp availability. Please carefully review the ordering matrix during the specification process. Also, please note that luminaires can not be field-modified to change optics or lamps.

NOTES:

- Standard pendant length is 18". Stated length is the distance from the ceiling to the top of the luminaire and takes into account the mounting hardware. For other stem length add desired length in inches after "P" ex 300-O-P24-B-50HPS-120-BRP
- Consult factory for other voltages
- Not Available with Reflector: "R" Trim.
- Must use open fixture rated E-17 lamps.
- R70MH and R100MH not available with Open Downlight "300-O" model
- Luminaire is supplied with lamp.

mcPhiblen OUTDOOR

2661 Alvarado Street
San Leandro, CA 94577
800/227-0758
510/357-6900 (California)
510/357-3088 (Fax)

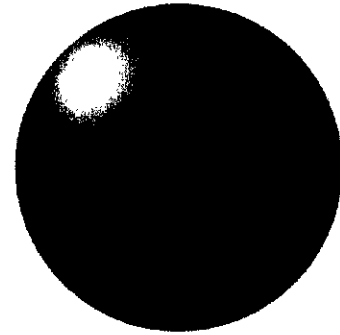
THOMAS
McPHIBLEN
LIGHTING

70304 6/108

FIXTURE TYPE SG (Part 1 of 2)



Semi-recessed luminaires with fully shielded light source. Tempered, prismatic glass lens. Suitable for wet locations. Down orientation only. Socket head stainless steel screws.
Color: Black or white.
2926P Opening: 9"ø" x 3"
2926P/S Opening: 9"ø" x 6"
2926MH Opening: 9"ø" x 6"



			Lamp		Lumen	A	B	C
2906P	Recessed	ADA	1 9W PLC	575	6"	2"	4"	
2926P	Recessed	ADA	1 13W PLC	900	9"	2"	3"	
2926P	Recessed	ADA	1 26W PLC	1800	11"	3"	6"	
2926S	Recessed	ADA	1 50W E-17 HPS	4000	11"	3"	6"	
2926MH	Recessed	ADA	1 70W ED-17 MH	8500	11"	3"	6"	
510	C.P.C., Concrete Protection Cover for 2906P							
610	C.P.C., Concrete Protection Cover for 2926P							

FIXTURE TYPE SG (Part 2 of 2)

Photometric Report (Type C)

Filename: 2928p.ies
[TEST] BE1878
[DATE] 17-JUNE-97
[MANUFAC] BEGA
[LUMCAT] 2928P
[LUMINAIRE] RECESSED WALL LUMINAIRE
[LAMP] (1) 26W PLC COMPACT FLUORESCENT

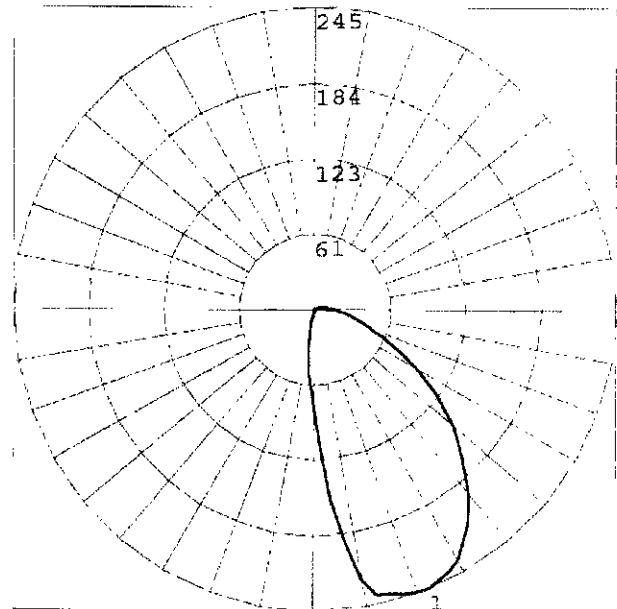
Maximum Candela = 245.33999350071 at 0 H 22.5 V

Classification:

Road Classification: Type II, Very Short, Cutoff
Indoor Classification: Direct

Polar Candela Curves:

Vertical Plane Through:
1) 0 - 180 Horizontal



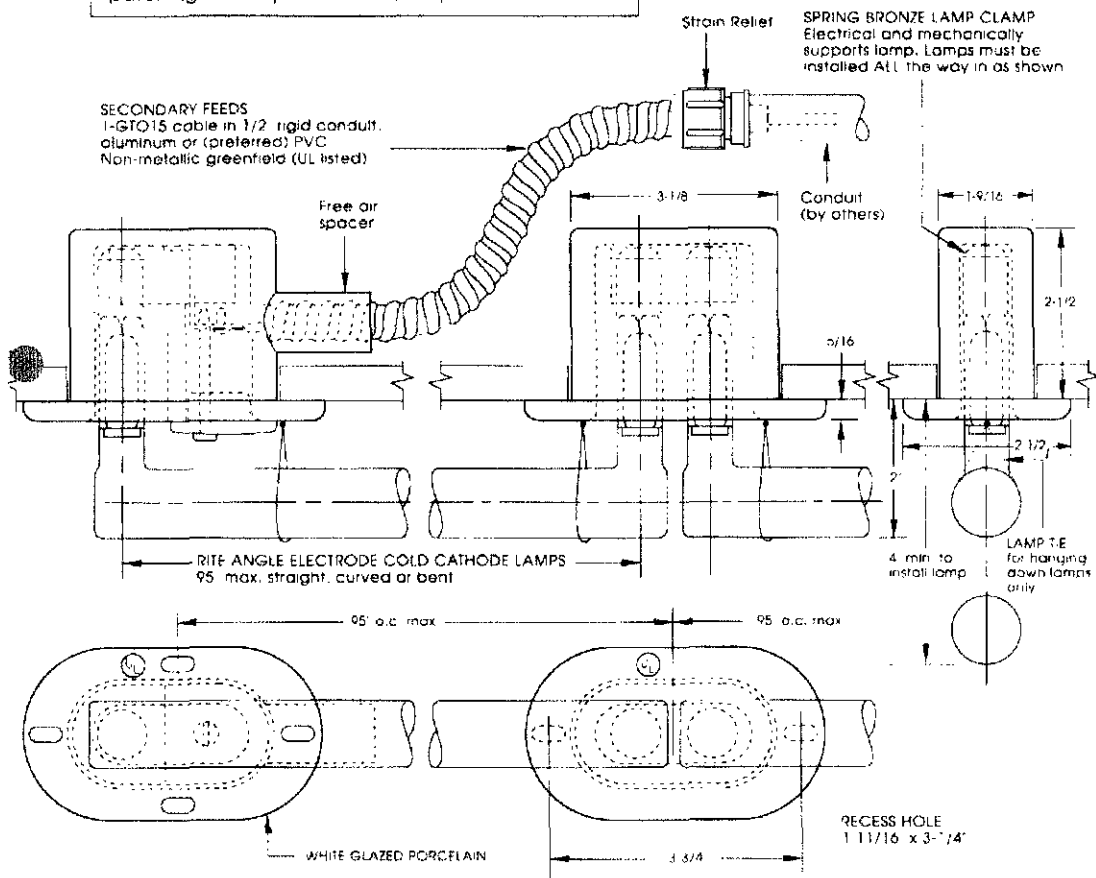
FIXTURE TYPE SH

Cold Cathode Recessed Mounted "RR & RRFA" Lampholders

Produces continuous line of light (mounted to vertical or horizontal planes).
Utilizes 25mm (1") dia. lamps for highest light output available.
U.L. & C.S.A. systems approved for transformer operation.
Exclusively National Cathode Corp.

NOTE: Recessed lampholders mounted to vertical plane on curved walls are impractical, due to the fact that the installing contractor will have a difficult time installing, requires additional plastering and patching and impossible to relamp.

Model: RR (Intermediate)
Model: RRFA (Feed)



NOTE: See next page for proper installation requirements for Recessed Mounted lampholders

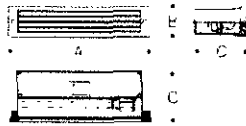
**TYPICAL SECTION
HALF SIZE**



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FIXTURE TYPE SJ (Part 1 of 2)



Recessed luminaires with die cast aluminum louvers and etched tempered diffusers. Suitable for wet locations.
Color: Black.
2283 has integral electronic transformer and includes 1142 lamp.
2283 Opening: 5 3/8" x 2 1/2" x 4"
2286P Opening: 9 1/2" x 2 1/2" x 4"
2286P Opening: 11 1/2" x 2 1/2" x 4"



		Lamp	Lumen	A	B	C
2283	* Transformer	ADA 1 18W S8, 12V	264	6	2 1/2"	4 1/4"
2286P	Location Light	ADA 1 9W PL	600	9 1/2"	2 1/2"	4 1/4"
2286P	Location Light	ADA 1 13W PL	900	11 1/2"	2 1/2"	4 1/4"

FIXTURE TYPE SJ (2 of 2)

Photometric Report (Type C)

Filename: 2286.ies
[TEST] BE1095
[DATE] 17-MAY-96
[MANUFAC] BEGA
[LUMCAT] 2286P
[LUMINAIRE] RECESSED WALL LUMINAIRE
[LAMP] (1) 13W PL COMPACT FLUORESCENT

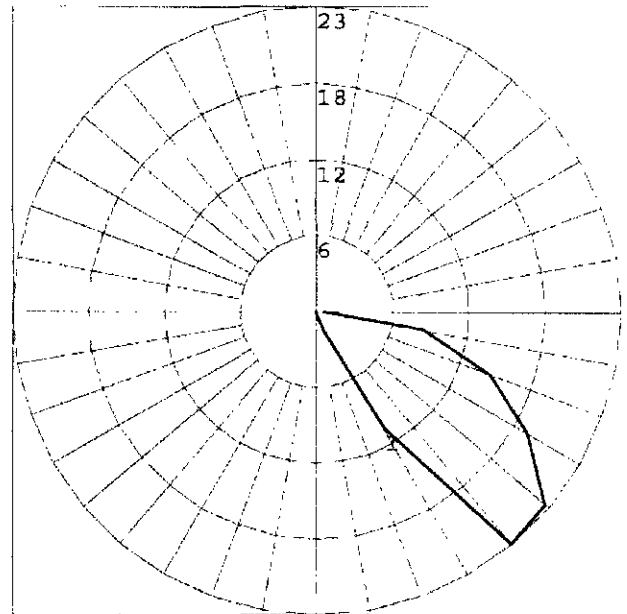
Maximum Candela = 23.3999996185303 at 15 H 40 V

Classification:

Road Classification: Type IV, Very Short, Cutoff
Indoor Classification: Direct

Polar Candela Curves:

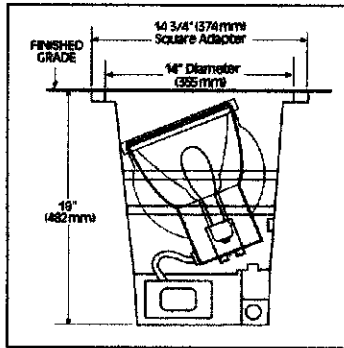
Vertical Plane Through:
1) 15 - 195 Horizontal



FIXTURE TYPE SK (1 of 2)

INGROUND

GMA6000



The GMA6000 is double sealed and load rated for severe-duty conditions. It features advanced luminaire design for accent lighting in commercial and architectural applications. It is constructed of high-strength composite material, and features modular design for easy interchange of the lamp, ballast and connectors. A wide selection of reflectors, lampings and accessories are available.

S P E C I F I C A T I O N S

FIXTURE AND HOUSING JUNCTION BOX

Housing and integral junction box are constructed of high temperature UV resistant composite material. Two 3/4" N.P.T. conduit entrances are provided with provisions for a field-drilled 3/4" branch outlet. Potting compound for junction box is provided. Failure to pot junction box will void warranty.

LENS AND GASKETING

All external lenses are clear, high-impact tempered glass with silicone O-ring gaskets. External lenses are standard flat, load bearing, drive over and convex. Internal clear or spread lenses are high impact tempered glass with a fiber gasket. Junction box gasket is flat neoprene.

BALLAST MODULE

Standard high power factor core and coil ballast is totally encapsulated in waterproof, heat dissipating polyester resin. Ballast is prewired with high temperature power cords and waterproof quick connects. Standard voltage is 120. Other voltages available include 208, 240, 277, 220 50Hz and 240 50Hz (specify).

FASTENERS

All fasteners are stainless steel or bronze.

LAMP MODULE

Lamp housing and lens ring are constructed of high temperature UV resistant composite. Lamp module is prewired with 200°C wire and waterproof quick connect. Lamp is included. Cam-latch closure system requires no fasteners for dust-tight seal.

CUTOFF SWITCH

A prewired cutoff switch automatically disconnects primary power to the ballast when the lamp module is removed for relamping.

SOCKETS

All sockets are high temperature glazed porcelain with the exception of sockets for fluorescent lamps which are high temperature plastic.

LAMPS

All lamps are provided; installed in dry air environment. Refer to ordering guide for specific lamp types. 75-300 watt incandescent; 50-250 watt mercury vapor; 50-250 watt metal halide; 50-250 watt high pressure sodium; 28-42 watt fluorescent.

AIMING

- 15° angular adjustment either side of vertical
- 360° horizontal rotation adjustment.

DRAINAGE

- No gravel bed or subsurface drainage required

UL LISTED

CUL LISTED

L A M P I N G G U I D E

Lamp Wattage	28	42	50	70	75	100	150	175	250	300
Incandescent										
Mercury Vapor										
Metal Halide										
HPS										
Fluorescent										

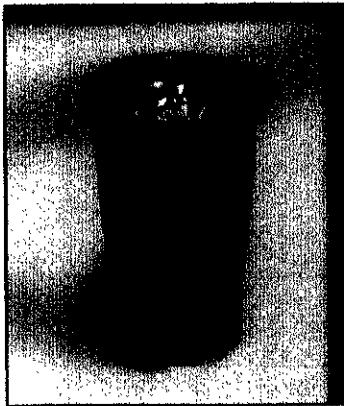
FIXTURE TYPE SK (2 of 2)

Bronzelite.

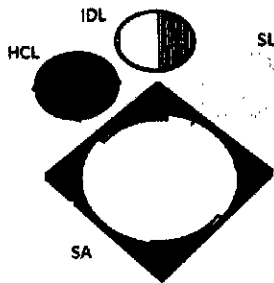
GMA6000

ORDERING GUIDE

GMA6 Model	250 Wattage	MH Source	SP Optics	120 Voltage	DO Accessories
75-300 - Incandescent		INC - Incandescent	SP - Spot: E17, E18, T-8	120	DSA - Directional Shield Aluminum
50-250 - Mercury Vapor		MV - Mercury Vapor	FL - Flood: E17, E18, E23 ^{1/2}	208	DSB - Directional Shield Bronze
50-250 - Metal Halide		MH - Metal Halide	E28, PL-C, PL-T ¹	240	RBA - Rock Guard Aluminum
50-250 - High Pressure Sodium		HPS - High Pressure Sodium	H - Horizontal: E17, PL-C	277	RBB - Rock Guard Bronze
28-42 - Fluorescent		F - Fluorescent	PL-T, T6, T7 ¹		RBC - Rock Guard Composite
			SR - Spot Reflector Lamp	220-50HZ	CL - Convex Lens ²
			FR - Flood Reflector Lamp	240-50HZ	DO - Drive Over Lens ²
					SL - Spread Lens
					SRL - Slip Resistant Lens
					NCL - Internal Honeycomb Louver
					IDL - Internal Directional Louver
					SA - Round to Square Adapter
					CMF - Concrete Mounting Frame ³
					LA - Lock Aim™



1. For 70 and 150 watt HQI® horizontal lamps, asymmetric and bisymmetric distributors are available. Specify HA or HB.
2. Not suitable for use with rock guard.
3. Optional. Concrete can be poured directly around fixture.



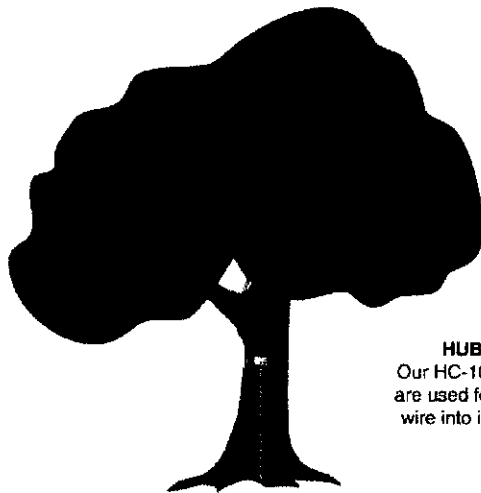
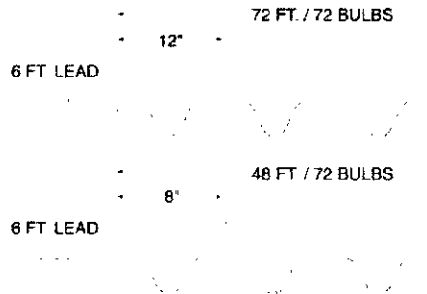
FIXTURE TYPE SL

SL WG - 12

CODE	COLOR	MODEL#	SPACING
WG	WARM GRAY	12	12"
GR	GREEN	8	8"
BK	BLACK		

SL LIGHTSTRINGS

may be specified with 8" or 12" bulb spacing. Each length has 72 bulbs, and is provided with a 6 foot lead wire. End caps are provided on the end of each Lightstring.



ATTACHMENT
Lightstrings may be secured to branches with our VT-12 gray vinyl ties.



HUB CONNECTORS
Our HC-10 gasketed enclosures are used for splicing large gauge wire into individual Lightstrings.



BULB REPLACEMENT
Tamper-proof bulbs are changed easily with our replacement tool. Feel confident specifying Lightstrings even within areas of easy access.

COLOR FILTERS
Color variations are made possible with the use of our RC-105 silicon filters.

