

APPENDIX L
LIGHTING PLAN



300 Derek Place
Roseville, CA
916-774-6888

Ian,

In an effort to help you and others that may need help in understanding the photometric layout for the Idaho-Maryland mine, please review the following.

The numbers that you see covering the layout are a measure of the light coming out of the light fixtures either from a wall mounted fixture or the flood lights on the poles. The measure of light is called a foot-candle (fc). Each light fixture has a reflector inside that creates the punch of light that is demonstrated by the rounded lines coming off the fixture locations. This is how you get light out of the fixture and create your foot-candles for measurement.

The catalog numbers of the fixtures are a series, the wattage of the lamp (light bulb) and the type of lamp, which in this case is High Pressure Sodium (a type of High Intensity Discharge lamp), and the type of reflector in the fixture. All the pole mounted fixtures are on a 30 foot pole and the wall mounted fixtures are at various heights depending on the height of the building walls.

If you have any further questions or need further explanations. Please contact myself or Jeff McCrary. Again, he would be willing to meet with the committee to explain this if needed.

Regards,

Kandy Welch

**INDIVIDUAL LIGHTING PLANS FOR EACH SITE
ARE CONTAINED IN VOLUME II, PLATES 17, 18 AND 19**

FEATURES & SPECIFICATIONS

INTENDED USE

For large area facade or monument floodlighting.

CONSTRUCTION

Horizontally oriented, rugged, heavy-gauge, lightweight aluminum housing. Continuously seam-welded and fully gasketed for weathertight integrity. Stainless steel fasteners. Aluminum door frame is secured with four stainless steel latches.

FINISH

Standard finish is dark bronze (DDB) corrosion-resistant, polyester powder with other architectural colors available.

OPTICAL SYSTEM

Anodized aluminum reflector. Four distributions available to provide varying rectangular beam patterns. Thermal- and shock-resistant, tempered, flat lens.

ELECTRICAL SYSTEM

Constant-wattage autotransformer ballast is copper wound and 100% factory tested. Mogul-base, porcelain sockets with copper alloy, nickel-plated screw shell and center contact. UL listed 1500W, 600V, 5KV pulse rated.

INSTALLATION

Painted steel yoke. Vertical aiming device with repositioning stop included to assist in positioning luminaire and 3 ft. 14/3 SEO cable, standard.

LISTING

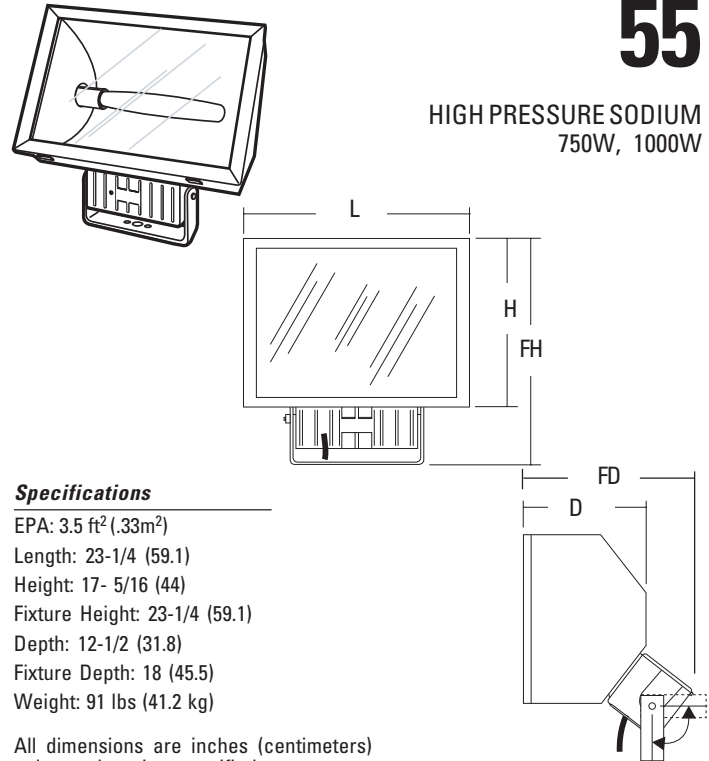
UL listed for wet locations. Listed and labeled to comply with Canadian Standards (see Options).

| | |
|----------------|------|
| Catalog Number | |
| Notes | Type |

High Performance Floodlighting

55

HIGH PRESSURE SODIUM
750W, 1000W



Specifications

EPA: 3.5 ft² (.33m²)
 Length: 23-1/4 (59.1)
 Height: 17- 5/16 (44)
 Fixture Height: 23-1/4 (59.1)
 Depth: 12-1/2 (31.8)
 Fixture Depth: 18 (45.5)
 Weight: 91 lbs (41.2 kg)

All dimensions are inches (centimeters) unless otherwise specified.

ORDERING INFORMATION

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories as separate catalog number.

Example: **55 1000S RPN 120 SF DDB LPI**

| Series | Distribution ¹ | Voltage | Optional mounting | Options |
|-----------------|---------------------------|------------------------|---|--|
| 55 750S | RPN 95°H X 10°V | 120 | Shipped Separately | Shipped Installed In Fixture |
| 55 1000S | RNE 105°H X 70°V | 208² | FTS⁴ Tenon slipfitter | SF Single fuse (120, 277, 347V, n/a TB) |
| | RME 110°H X 78°V | 240² | FCRA⁴ Cross-arm adapter | DF Double fuse (208, 240, 480V, n/a TB) |
| | RWE 113°H X 88°V | 277 | FCRA45⁴ Cross-arm adapter (45° mount) | PER NEMA twist-lock receptacle only |
| | | 347 | EWB⁴ Extended wall bracket | CSA Listed and labeled to comply with Canadian Standards |
| | | 480² | MP⁴ Mounting plate | LPI Lamp included as standard |
| | | TB³ | TM⁵ Tenon mount | L/LP Less lamp |
| | | | | QRS Quartz restrike |
| | | | | Shipped Separately⁶ |
| | | | | UV Upper visor |
| | | | | BV Bottom visor |
| | | | | FV Full visor (4 sided) |
| | | | | GV Glare visor (3 sided) |
| | | | | SC Shorting cap |
| | | | | PE1⁷ NEMA twist-lock photocontrol (120, 208, 240V) |
| | | | | PE3⁷ NEMA twist-lock photocontrol (347V) |
| | | | | PE4⁷ NEMA twist-lock photocontrol (480V) |
| | | | | PE7⁷ NEMA twist-lock photocontrol (277V) |
| | | | | Outdoor Remote |
| | | | | MR1 Non-encapsulated |
| | | | | Architectural Colors (powder finish) ⁸ |
| | | | | Standard Colors |
| | | | | DDB Dark bronze (standard) |
| | | | | DWH White |
| | | | | DBL Black |
| | | | | Classic Colors |
| | | | | DMB Medium bronze |
| | | | | DNA Natural aluminum |
| | | | | DSS Sandstone |
| | | | | DGC Charcoal gray |
| | | | | DTG Tennis green |
| | | | | DBR Bright red |
| | | | | DSB Steel blue |
| | | | | Architectural Class 1 Anodize |
| | | | | ANA Clear anodize |

NOTES:

- Beam spread 10% max. candela.
- Consult factory for availability in Canada.
- Optional multi-tap ballast (120, 208, 240, 277V) In Canada 120, 277, 347V; ships as 120/347.
- For use with YK mounting only.
- For use with TS option only. TS included.
- May be ordered as an accessory.
- PER must be ordered with fixture.
- Other architectural colors available; see Architectural Colors brochure form no. 794.3.

55 High Pressure Sodium High Performance Floodlighting

— Vertical Candlepower
 — Horizontal Candlepower

55 1000S RPN

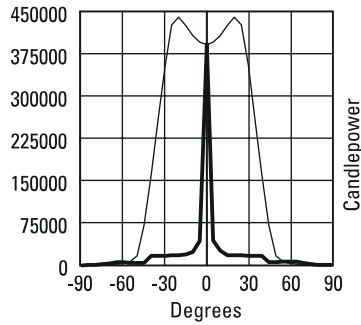
Test No. SH10049H

140,000 Lumens

NEMA Type: 5 H x 1 V

10% Maximum Candela
 95° H x 10° V

50% Maximum Candela
 74° H x 5° V



55 1000S RNE

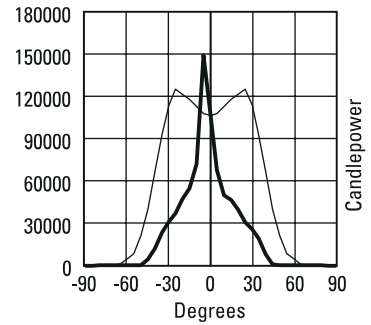
Test No. SH10069H

140,000 Lumens

NEMA Type: 6 H x 4 V

10% Maximum Candela
 105° H x 70° V

50% Maximum Candela
 82° H x 12° V



55 1000S RME

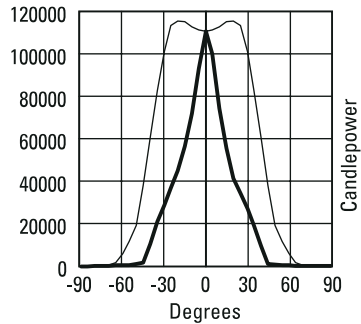
Test No. SH10071H

140,000 Lumens

NEMA Type: 6 H x 5 V

10% Maximum Candela
 110° H x 78° V

50% Maximum Candela
 81° H x 29° V



55 1000S RWE

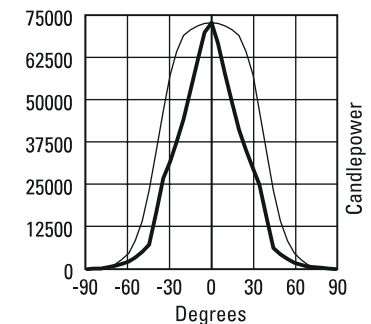
Test No. SH10072H

140,000 Lumens

NEMA Type: 6 H x 5 V

10% Maximum Candela
 113° H x 88° V

50% Maximum Candela
 79° H x 50° V



NOTES:

1. Photometric data for other distributions can be accessed from the Lithonia Lighting website. (www.lithonia.com)
2. For electrical characteristics, consult technical data tab.
3. Tested to current IES and NEMA standards under stabilized laboratory conditions. Various operating factors can cause differences between laboratory and actual field measurements. Dimensions and specifications are based on the most current data and are subject to change.



Lithonia Lighting

Acuity Lighting Group, Inc.

Outdoor

One Lithonia Way, Conyers, GA 30012

Phone: 770-922-9000 Fax: 770-918-1209

In Canada: 160 avenue Labrosse, Point-Claire, P.Q., H9R 1A1

www.lithonia.com

| | |
|----------------|------|
| Catalog Number | |
| Notes | Type |

FEATURES & SPECIFICATIONS

INTENDED USE – Ideal for use in car lots, street lighting or parking areas.

CONSTRUCTION – Rugged, .063" thick, aluminum rectilinear housing. Continuously seam welded for weather-tight seal and integrity. Naturally anodized, extruded, aluminum door frame with mitered corners is retained with (two) .188" diameter hinge pins and secured with (one) quarter-turn, quick release fastener. Weatherproof seal between housing and door frame is accomplished with an integrally designed, extruded silicone gasket that snaps into door frame.

FINISH – Standard finish is dark bronze (DDB) polyester powder. Other powder architectural colors available.

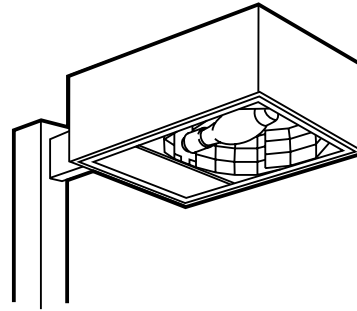
OPTICAL SYSTEM – Reflectors are anodized and segmented for superior uniformity and control, which allows the flexibility to mix distributions without compromising the overall lighting job. Reflectors attach with tool-less fasteners and are rotatable and interchangeable. Five cutoff distributions available: Type II (roadway), Type III (asymmetric), Type IV (forward throw, sharp cutoff), Type IV (wide, forward throw), and Type V (square symmetrical).

Lens is .125" thick, impact-resistant, tempered, glass with thermally-applied, silk screened power door shield.

ELECTRICAL SYSTEM – Constant-wattage autotransformer is 100% copper wound and factory tested. Removable power door and positive-locking disconnect plug. Porcelain, horizontally-oriented, mogul-base socket with copper alloy, nickel plated screw shell and center contact. UL listed 1500W- 600V, 4KV pulse rated.

INSTALLATION – Extruded, 4" aluminum arm for pole or wall mounting is shipped in fixture carton. Optional mountings available.

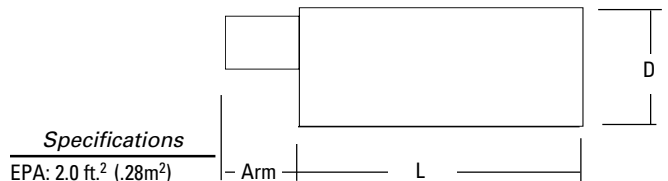
LISTING – UL listed for wet locations. Listed and labeled to comply with Canadian Standards (see Options).



Area Lighting

KSF2

HIGH PRESSURE SODIUM
250W, 400W
25' to 35' Mounting



Specifications

EPA: 2.0 ft.² (.28m²)
(includes arm)
Length: 25 -5/16 (64.3)
Width: 18-1/2 (47.0)
Depth: 8-5/16 (21.1)
Weight: 55 lbs (24.9kg)
Arm: 4 (10.2)

All dimensions are inches (centimeters) unless otherwise specified.

| Mounting Option | Drilling Template ⁶ |
|-------------------|--------------------------------|
| SPxx, RPxx, DA12P | 5 |
| WBxx, DA12WB | 6 |
| WWxx | 7 |

ORDERING INFORMATION

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories as separate catalog number.

Example: **KSF2 400S R3 120 SP04 SF DDB LPI**

| Series | Voltage | Mounting ⁶ | Options |
|---|------------------------|--|---|
| KSF2 200S | 120 | SP04 Square pole (4" arm) (standard) ³ | Shipped Installed In Fixture |
| KSF2 250S | 208¹ | SP09 Square pole (9" arm) | SF Single fuse (120, 277, 347V, n/a TB) |
| KSF2 400S | 240¹ | RP04 Round pole (4" arm) ³ | DF Double fuse (208, 240, 480V, n/a TB) |
| Distribution | 277 | RP09 Round pole (9" arm) | LPI Lamp included as standard |
| R2 IES Type II roadway | 347 | WW04 Wood pole or wall (4" arm) ³ | L/LP Less lamp |
| R3 IES Type III asymmetric | 480¹ | WW09 Wood pole or wall (9" arm) | PER NEMA twist-lock receptacle only (no photocontrol) |
| R4SC IES Type IV forward throw, sharp cutoff | TB² | WB04 Wall bracket (4" arm) | QRS Quartz restrike system (75W max; lamp not included, 120V only) |
| R4W IES Type IV wide, forward throw | | WB09 Wall bracket (9" arm) | EC Emergency circuit |
| R5S IES Type V square | | L/ARM When ordering KMA, DA12 | CR Enhanced corrosion resistance |
| | | | CSA Listed and labeled to comply with Canadian Standards |

KSF2HS House side shield (R2,R3)

KSF2VG Vandal guard

Architectural Colors (powder finish)⁵

Standard Colors

DDB Dark bronze (standard)

DWH White

DBL Black

Classic Colors

DMB Medium bronze

DNA Natural aluminum

DSS Sandstone

DGC Charcoal gray

DTG Tennis green

DBR Bright red

DSB Steel blue

NOTES:

- Consult factory for availability in Canada.
- Optional multi-tap ballast (120, 208, 240, 277V). (120, 277, 347V in Canada).
- SP09, RP09, or WW09 must be used when two or more luminaires are oriented on a 90° drilling pattern.
- May be ordered as accessory.
- Additional architectural colors available; see Architectural Colors brochure.
- For arm mounting, see technical data section in Outdoor binder for drilling template.

OPTIONAL MOUNTING

(shipped separately)

- DA12P** Degree arm (pole)
- DA12WB** Degree arm (wall)
- KMA** Mast arm adapter
- KTMB** Twin mounting bar

Shipped separately⁴

- PE1** NEMA twist-lock PE (120, 208, 240V)
- PE3** NEMA twist-lock PE (347V)
- PE4** NEMA twist-lock PE (480V)
- PE7** NEMA twist-lock PE (277V)
- SC** Shorting cap for PER option

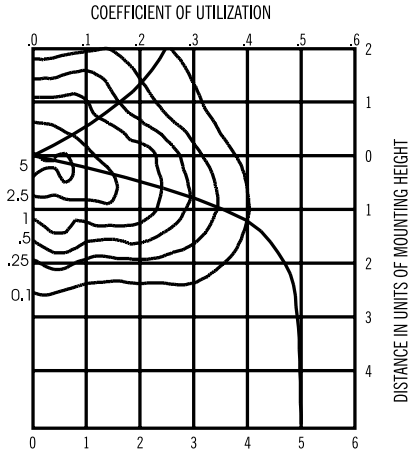
Accessories: Tenon Mounting Slipfitter (Order separately)

| Tenon O.D. | Number of fixtures | | | | | |
|------------|--------------------|----------------|----------------------|----------------|------------------------|-----------------------|
| | One | Two@180° | Two@90° ³ | Three@120° | Three@90° ³ | Four@90° ³ |
| 2-3/8" | T20-190 | T20-280 | T20-290 | T20-320 | T20-390 | T20-490 |
| 2-7/8" | T25-190 | T25-280 | T25-290 | T25-320 | T25-390 | T25-490 |
| 4" | T35-190 | T35-280 | T35-290 | T35-320 | T35-390 | T35-490 |

KSF2 400S Arm-Mounted Rectilinear Cutoff Lighting

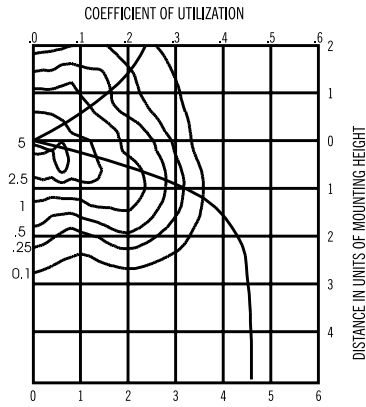
Coefficient of Utilization _____
Initial Footcandles _____

KSF2 400S R2 Test No. 1193031601



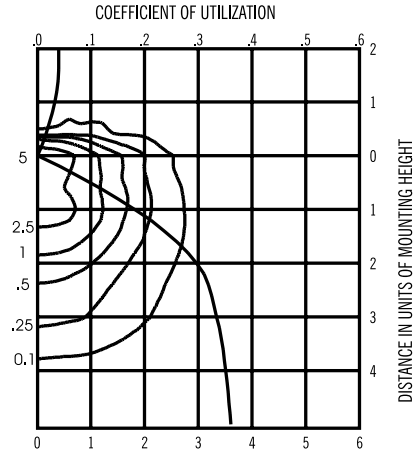
400W High Pressure Sodium lamp, 50000 rated lumens. Footcandle values based on 35' mounting height, Distribution II, cutoff.

KSF2 400S R3 Test No. TEST NO. 1194091501



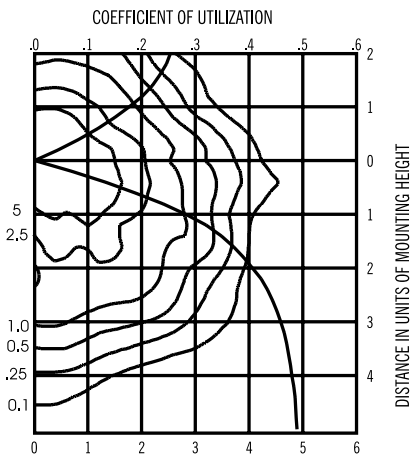
400W High Pressure Sodium lamp, rated lumens. Footcandle values based on 35' mounting height, Distribution III, cutoff.

KSF2 400S R4SC Test No. 1193042201



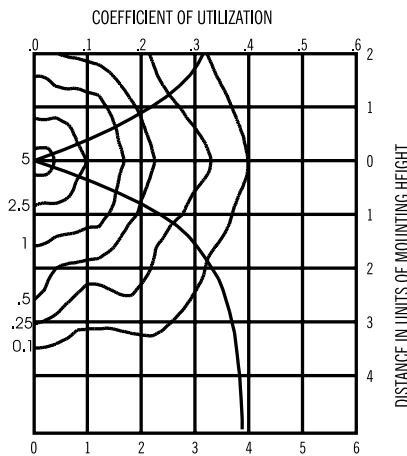
400W High Pressure Sodium lamp, 50000 rated lumens. Footcandle values based on 35' mounting height, Distribution IV, sharp cutoff.

KSF2 400S R4W Test No. LTL8506



400W High Pressure Sodium lamp, 50000 rated lumens. Footcandle values based on 20' mounting height, Distribution IV wide, forward throw.

KSF2 400S R5S Test No. 1193051704



400W High Pressure Sodium lamp, 50000 rated lumens. Footcandle values based on 35' mounting height, Distribution V, cutoff.

NOTES:

1. For electrical characteristics, consult technical data tab.
2. Tested to current IES and NEMA standards under stabilized laboratory conditions. Various operating factors can cause differences between laboratory and actual field measurements. Dimensions and specifications are based on the most current available data and are subject to change.
3. Photometric data for other distributions can be accessed from the Lithonia Lighting website. (www.lithonia.com)

Mounting Height Correction Factor

(Multiply the fc level by the correction factor)

25 ft.= 1.44

32 ft.= .88

35 ft.= .73

$$\frac{\text{Existing Mounting Height}^2}{\text{New Mounting Height}^2} = \text{Correction Factor}$$



| | |
|----------------|------|
| Catalog Number | |
| Notes | Type |

FEATURES & SPECIFICATIONS

INTENDED USE — Outdoor storage areas, warehouse and factory perimeters and loading docks.

CONSTRUCTION — Rugged, corrosion-resistant, die-cast aluminum. Corrosion-resistant external hardware includes slotted hex-head fasteners.

FINISH — Standard finish is electrostatically-applied, oven-cured, dark bronze (DDB) corrosion resistant polyester powder.

OPTICAL SYSTEM — Reflector is specular anodized aluminum. Refractor is prismatic borosilicate glass which is sealed and gasketed to inhibit the entrance of outside contaminants.

ELECTRICAL SYSTEM — Dual-wattage, constant-wattage autotransformer. Encased-and-potted solid state ignitors. Ballast is copper wound and 100% factory tested. Meets ANSI standards and is UL listed. Electrical components are mounted in hinged front cover that includes primary and secondary electrical disconnect. Factory prewired for 250S/277V operation.

Porcelain, horizontally-oriented, mogul-base socket with copper alloy, nickel-plated screw shell and center contact. UL listed 1500W, 600V and 4KV pulse rated.

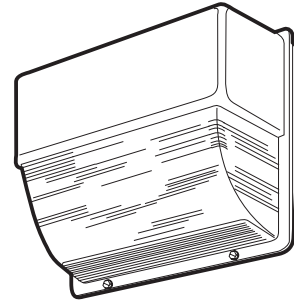
INSTALLATION — Back housing is separated from front housing, eliminating ballast weight and promoting easy handling. Top 3/4" threaded wiring access. Back access through removable 3/4" knockout. Feed-thru wiring can be achieved by using a condulet tee. Mount on any vertical surface. **Not recommended in applications where a sprayed stream of water can come in direct contact with glass lens.**

LISTING — UL listed suitable for wet locations.

Wall-Paks

TWH

HIGH PRESSURE SODIUM
250W, 400W
8' to 25' Mounting



Height: 15-3/4" (40cm)
Width: 16-1/4" (42.6cm)
Depth: 8" (20.3cm)
Weight: 42 lbs.(19 kg)

ORDERING INFORMATION

Example: **TWH 250/400S TB LPI**

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories as separate catalog numbers (shipped separately).

| TWH | | 250/400S | | Options | |
|--------|---------------|------------------------|--|---------------------------------|--|
| Series | Wattage /lamp | Voltage | | | |
| TWH | 250/400S | 120 | Shipped installed in fixture | | |
| | | 208 | CR Enhanced corrosion resistance | Architectural Colors (optional) | |
| | | 240 | CRT Non-stick protective coating ² | DNA Natural aluminum | |
| | | 277 | PE Photoelectric cell – button type ⁴ | DBL Black | |
| | | TB ¹ | LPI Lamp included as standard | DSB Steel blue | |
| | | | LS Less lamp | DMB Medium bronze | |
| | | | TP Tamper proof latches | DGC Charcoal gray | |
| | | | FS Full shield | DTG Tennis green | |
| | | | WG Wireguard ³ (shipped separately) | DBR Bright red | |
| | | | VG Vandal guard ³ (shipped separately) | DSS Sandstone | |
| | | | EC Emergency Circuit ⁵ | DWH White | |

Accessories

Order as separate catalog number.

RK1 PEB1 Photoelectric control kit (120V)

NOTES:

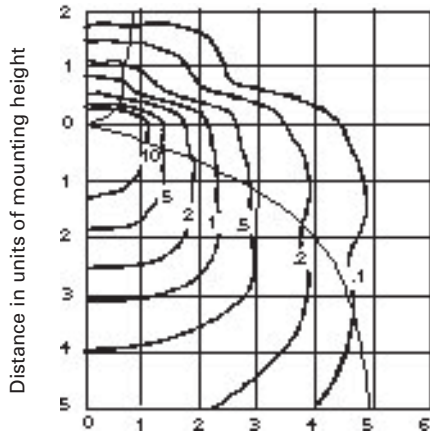
- Multi-tap ballast (120, 208, 240, 277V).
- Black finish only.
- Requires factory modification.
- Not available with multi-tap ballast.
- Quartz lamp not included, not to exceed ballast wattage.

TWH 250/400S High Pressure Sodium, Wall-Pak

Coefficient of Utilization _____
 Initial Footcandles _____

TWH 250S Test report no. 94121002

Coefficients of utilization

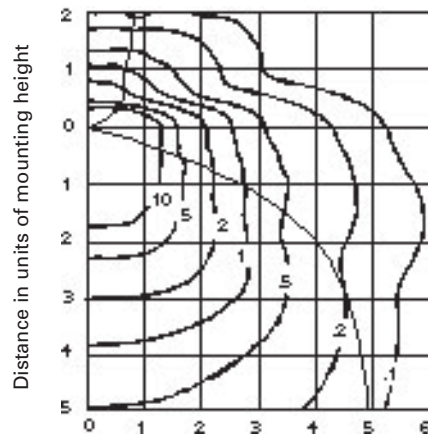


Distance in units of mounting height

250W, high pressure sodium lamp, horizontal lamp orientation, 12' mounting height, 27,500 rated lumens. **Total fixture efficiency: 70.9%**

TWH 400S Test report no. 94121001

Coefficients of utilization



Distance in units of mounting height

400W, high pressure sodium lamp, horizontal lamp orientation, 12' mounting height, 50,000 rated lumens. **Total fixture efficiency: 70.9%**

Mounting Height Correction Factor

(Multiply the fc level by the correction factor)

- 15 ft. = .64
- 20 ft. = .36
- 25 ft. = .23



Lithonia Lighting
 Acuity Lighting Group, Inc.
 Outdoor Lighting
 One Lithonia Way, Conyers, GA 30012
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