

# Code•Master™ 2 HID Factory Sealed Luminaires

## Explosionproof, Dust-Ignitionproof

Integrally Ballasted. 50 W, 70 W, 100 W, 150 W, 250 W, 400 W HPS; 175 W, 250 W, 400 W PSMH; 175 W, 250 W, 400 W MH.

Mogul Base. For use with threaded metal conduit.

### NEC:

Class I, Division 1 and 2, Groups C, D  
Class II, Division 1 and 2, Groups E, F, G  
Class III  
Marine Type Electric Fixtures  
Outside Type (Salt Water)

### CEC:

Class I, Division 1 and 2, Groups B, C, D  
Class I, Zone 1 and 2; IIB, IIA  
Class II, Division 1, Groups E, F, G  
Class II, Division 2, Groups F, G  
Class III

### CEC:

CSA Type 4X  
Exd IIB, Zone 1

## Applications

- Ideal for use in chemical and petrochemical plants, such as manufacturers of plastics, paints and thinners; in refineries; and in other process areas where ignitable vapors, dust, moisture and corrosive elements may be present.
- Suitable for use in wet locations.

## Features

- Fixtures operate safely in high ambient temperatures. For example, in Class I areas the 150 W HPS fixture operates at a maximum temperature of +120 °C (+248 °F) in a +65 °C (+149 °F) ambient [+100 °C (+212 °F) temperature in a +40 °C (+104 °F) ambient].
- Arrangement of heat-producing components results in more efficient heat dissipation for cooler fixture operation.
- "Wireless" design. Threading of fixture unit onto mounting hood makes electrical connection. Only wiring required is attaching two wires to connection block in mounting hood.
- Connection block is easily wired: (a) loosen two screws, (b) make wire connections and (c) re-position connection block.
- Safe, easy servicing without disconnecting any wiring.
- "Wireless" fixture unit easily threads off mounting hood for convenient servicing or for immediate replacement with a "stand-by" unit.
- Acme double-lead threads speed installation and fixture removal from mounting hood — only half as many turns are required as for single-lead threads. The threads do not stick or gall, eliminating the troublesome problems often encountered with single lead threads during fixture unit removal.
- All threaded joints are flame-tight.
- Integrally ballasted HID lighting fixtures; separate ballasts not required.
- Factory sealed. External seals not required.
- Strategic location of lamp socket in combination with the interior prism design of the glass globe provides optimum light distribution and control.
- Superior corrosion resistance, with epoxy powder coat finish.
- Porcelain socket with nickel-plated phosphor bronze screw shell. Assures long trouble-free operation in high ambient areas.
- Choice of mountings: pendant, ceiling, bracket and stanchion.
- Fiberglass-reinforced polyester reflectors, in standard dome, deep dome or 30° angle, are ideal in installations where luminaire is subject to exceptionally severe corrosive atmospheres. The high bay aluminum reflector is indicated in installations where mounting height from work plane ranges from 20 feet/6 meters and higher.
- Optional guards protect globes from damage. Secured to fixture with three screws.
- Light sources: high pressure sodium, pulse start metal halide or metal halide. HPS is excellent where long lamp life is required. HPS provides high lumens per watt and is less expensive to operate. PSMH/MH is desirable where colors of illuminated areas must be close to natural. PSMH/MH provides better color rendition, increased lumen output, longer lamp life, and faster restrike after momentary power interruption.
- A wide range of ballasts and voltages are available for both domestic and export applications.
- Ballasts operate at low temperatures — PSMH: -29 °C (-20 °F); HPS: -40 °C (-40 °F); MH: -35 °C (-31 °F).



- 50 W through 150 W high pressure sodium ballasts are high reactance, high power factor type.

## Standard Materials

- Ballast bodies and guards: copperfree (4/10 of 1% max.) aluminum
- Pendant mounting hoods: diecast copperfree (4/10 of 1% max.) aluminum
- Ceiling, bracket and stanchion mounting hoods: sand cast copperfree (4/10 of 1% max.) aluminum
- Reflectors: aluminum or fiberglass reinforced polyester

## Standard Finishes

- Ballast bodies, guards and mounting hoods: epoxy powder coat finish, electrostatically applied for complete, uniform corrosion protection

## Options

- Fuses for field installation can be ordered by catalog number from fuse kit table.
- Quartz Auxiliary Emergency Lamp for PSMH/MH and HPS fixtures. Relay switch installed in fixture. Add suffix **-E** to fixture catalog number. ①
- Hot Restrike Option available for 50 W through 150 W HPS only. Add suffix **-R**.
- Smart Starter Option available for 50 W through 400 W HPS and PSMH/MH. Add suffix **-S**.

## NEC/CEC Certifications and Compliances

- UL Standard: UL 1598, UL 844
- UL Listed: E10444
- CSA Standard: C22.2 No. 250, C22.2 No. 137
- CSA Certified: 025428

① Quartz Auxiliary Emergency Lamps for PSMH/MH and HPS fixtures are for ordinary locations only.

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Class II, Division 1, Groups E, F, G  
Class II, Division 2, Groups F, G  
Class III

### CEC:

CSA Type 4X  
Exd IIB, Zone 1

### Classified Area Suitability of Code•Master 2 Series HID Fixtures — Suitability includes use of reflector

| Lamp Type                | Lamp Watts | Supply Wire °C (°F) | Ambient Temp °C (°F) | Class I, Division 1 and 2 With Globe or with Globe and Reflector UL/NEC/CEC Temp. Ident. No. |            |            | Class II, Division 1 and 2 With Globe or with Globe and Reflector UL/NEC/CEC Temp. Ident. No. ① |         |
|--------------------------|------------|---------------------|----------------------|----------------------------------------------------------------------------------------------|------------|------------|-------------------------------------------------------------------------------------------------|---------|
|                          |            |                     |                      | Nameplate Marking                                                                            | NEC Groups | CEC Groups | Nameplate Marking                                                                               | Groups  |
| High Pressure Sodium     | 50         | 60 (140)            | 40 (104)             | <b>T6</b>                                                                                    | C, D       | B, C, D    | <b>T4</b>                                                                                       | E, F, G |
|                          | 50         | 75 (167)            | 55 (131)             | <b>T5</b>                                                                                    | C, D       | B, C, D    | —                                                                                               | —       |
|                          | 50         | 85 (185)            | 65 (149)             | <b>T5</b>                                                                                    | C, D       | B, C, D    | —                                                                                               | —       |
|                          | 70         | 60 (140)            | 40 (104)             | <b>T6</b>                                                                                    | C, D       | B, C, D    | <b>T4</b>                                                                                       | E, F, G |
|                          | 70         | 75 (167)            | 55 (131)             | <b>T5</b>                                                                                    | C, D       | B, C, D    | —                                                                                               | —       |
|                          | 70         | 85 (185)            | 65 (149)             | <b>T5</b>                                                                                    | C, D       | B, C, D    | —                                                                                               | —       |
|                          | 100        | 60 (140)            | 40 (104)             | <b>T5</b>                                                                                    | C, D       | B, C, D    | <b>T4</b>                                                                                       | E, F, G |
|                          | 100        | 75 (167)            | 55 (131)             | <b>T5</b>                                                                                    | C, D       | B, C, D    | —                                                                                               | —       |
|                          | 100        | 85 (185)            | 65 (149)             | <b>T4A</b>                                                                                   | C, D       | B, C, D    | —                                                                                               | —       |
|                          | 150        | 60 (140)            | 40 (104)             | <b>T5</b>                                                                                    | C, D       | B, C, D    | <b>T3A</b>                                                                                      | E, F    |
|                          | 150        | 75 (167)            | 55 (131)             | <b>T4A</b>                                                                                   | C, D       | B, C, D    | <b>T3</b>                                                                                       | —       |
|                          | 250        | 75 (167)            | 40 (104)             | <b>T3C</b>                                                                                   | C, D       | B, C, D    | —                                                                                               | —       |
| Pulse Start Metal Halide | 250        | 75 (167)            | 55 (131)             | <b>T3C</b>                                                                                   | C, D       | B, C, D    | —                                                                                               | —       |
|                          | 400        | 85 (185)            | 40 (104)             | <b>T3C</b>                                                                                   | C, D       | B, C, D    | —                                                                                               | —       |
|                          | 175        | 75 (167)            | 40 (104)             | <b>T4</b>                                                                                    | C, D       | B, C, D    | <b>T3C</b>                                                                                      | E, F, G |
|                          | 250        | 75 (167)            | 40 (104)             | <b>T4</b>                                                                                    | C, D       | B, C, D    | <b>T3A</b>                                                                                      | E, F    |
| Metal Halide ②           | 400        | 75 (167)            | 40 (104)             | <b>T3C</b>                                                                                   | C, D       | B, C, D    | —                                                                                               | —       |
|                          | 175        | 75 (167)            | 40 (104)             | <b>T4</b>                                                                                    | —          | B, C, D    | <b>T3C</b>                                                                                      | E, F, G |
|                          | 250        | 75 (167)            | 40 (104)             | <b>T4</b>                                                                                    | —          | B, C, D    | <b>T3A</b>                                                                                      | E, F    |
|                          | 400        | 75 (167)            | 40 (104)             | <b>T3C</b>                                                                                   | —          | B, C, D    | —                                                                                               | —       |

“T” Numbers Represent the Maximum Surface Temperature for Class I, Division 1 Locations and Maximum Surface Temperature Under Dust Blanket for Class II, Division 1 Locations.

| “T” Number       | T1      | 350     | 325     | T2      | T2A     | T2B     | T2C     | T2D     | T3      | T3A     | T3B     | T3C     | T4      | T4A     | T5     | T6  |
|------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|-----|
| Temp. Range (°C) | 351-450 | 326-350 | 301-325 | 281-300 | 261-280 | 231-260 | 216-230 | 201-215 | 181-200 | 166-180 | 161-165 | 136-160 | 121-135 | 101-120 | 86-100 | 85  |
| Temp. Range (°F) | 664-842 | 619-662 | 574-617 | 538-572 | 502-536 | 448-500 | 421-446 | 394-419 | 358-392 | 331-356 | 322-329 | 277-320 | 250-275 | 214-248 | 187-12 | 185 |

NOTE: The maximum operating temperature of the fixture must not exceed the ignition temperature of the gas, vapor or dust to be encountered per the National Electrical Code and the Canadian Electrical Code.

① Applies to Code•Master 2 only.

② Mercury vapor and metal halide luminaires are not available for purchase within the United States. Please check with your countries governing legislation regarding allowable lamp types before ordering.

# Code•Master™ 2 HID Factory Sealed Luminaires

## Explosionproof, Dust-Ignitionproof. Groups B, C and D Applications

Integrally Ballasted. 70 W, 100 W, 150 W, 250 W, 400 W HPS; 175 W, 250 W, 400 W PSMH; 175 W, 250 W, 400 W MH.

Mogul Base. For use with threaded metal conduit.

### CEC:

Class I, Division 1 and 2, Groups B, C, D ♦

Class I, Zone 1 and 2; IIB, IIA

Class II, Division 1, Groups E, F, G

Class II, Division 2, Groups F, G

Class III

### CEC:

CSA Type 4X

Exd IIB, Zone 1

|                                                                                   | Lamp<br>Watts                             | ANSI Lamp Type |      |     | Hub<br>Size<br>(Inches) | Catalog Number ①② |             |             |
|-----------------------------------------------------------------------------------|-------------------------------------------|----------------|------|-----|-------------------------|-------------------|-------------|-------------|
|                                                                                   |                                           | HPS            | PSMH | MH  |                         | HPS               | PSMH        | MH ③        |
|  | Bracket - Four Hubs, Three Close-Up Plugs |                |      |     |                         |                   |             |             |
|                                                                                   | 70                                        | S62            | —    | —   | 3/4                     | CLB7075TTCN       | —           | —           |
|                                                                                   |                                           |                |      |     | 1                       | CLB7010TTCN       | —           | —           |
|                                                                                   | 100                                       | S54            | —    | —   | 3/4                     | CLB1075TTCN       | —           | —           |
|                                                                                   |                                           |                |      |     | 1                       | CLB1010TTCN       | —           | —           |
|                                                                                   | 150                                       | S55            | —    | —   | 3/4                     | CLB1575TTCN       | —           | —           |
|                                                                                   |                                           |                |      |     | 1                       | CLB1510TTCN       | —           | —           |
|                                                                                   | 175                                       | —              | M152 | M57 | 3/4                     | —                 | CPB1775TTCN | CHB1775TTCN |
|                                                                                   |                                           |                |      |     | 1                       | —                 | CPB1710TTCN | CHB1710TTCN |
|                                                                                   | 250                                       | S50            | M153 | M58 | 3/4                     | CLB2575TTCN       | CPB2575TTCN | CHB2575TTCN |
|                                                                                   |                                           |                |      |     | 1                       | CLB2510TTCN       | CPB2510TTCN | CHB2510TTCN |
|                                                                                   | 400                                       | S51            | M155 | M59 | 3/4                     | CLB4075TTCN       | CPB4075TTCN | CHB4075TTCN |
| 1                                                                                 |                                           |                |      |     | CLB4010TTCN             | CPB4010TTCN       | CHB4010TTCN |             |

### 25° Stanchion - One Hub

|                                                                                     |     |     |      |     |                  |              |              |              |
|-------------------------------------------------------------------------------------|-----|-----|------|-----|------------------|--------------|--------------|--------------|
|  | 70  | S62 | —    | —   | 1-1/4 or 1-1/2 ④ | CLS70150TTCN | —            | —            |
|                                                                                     | 100 | S54 | —    | —   | 1-1/4 or 1-1/2 ④ | CLS10150TTCN | —            | —            |
|                                                                                     | 150 | S55 | —    | —   | 1-1/4 or 1-1/2 ④ | CLS15150TTCN | —            | —            |
|                                                                                     | 175 | —   | M152 | M57 | 1-1/4 or 1-1/2 ④ | —            | CPS17150TTCN | CHS17150TTCN |
|                                                                                     | 250 | S50 | M153 | M58 | 1-1/4 or 1-1/2 ④ | CLS25150TTCN | CPS25150TTCN | CHS25150TTCN |
|                                                                                     | 400 | S51 | M155 | M59 | 1-1/4 or 1-1/2 ④ | CLS40150TTCN | CPS40150TTCN | CHS40150TTCN |

① Change voltage suffix -TT (120/277/347 V) to -MT for 120/208/240/277 V, -C2 for 208 V, -C3 for 240 V, -C6 for 480 V, or -C7 for 600 V. These voltage suffixes have CSA Certification only.

② To order fixture with guard, add suffix -G (before adding voltage suffix).

③ Mercury vapor and metal halide luminaires are not available for purchase within the United States. Please check with your countries governing legislation regarding allowable lamp types before ordering.

④ 1-1/2" tapped hub furnished with 1-1/2" to 1-1/4" reducer.

♦ Shaded items are suitable for Class I, Group D ONLY.

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Mogul Base. For use with threaded metal conduit.

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Class III  
Marine Type Electric Fixtures  
Outside Type (Salt Water)

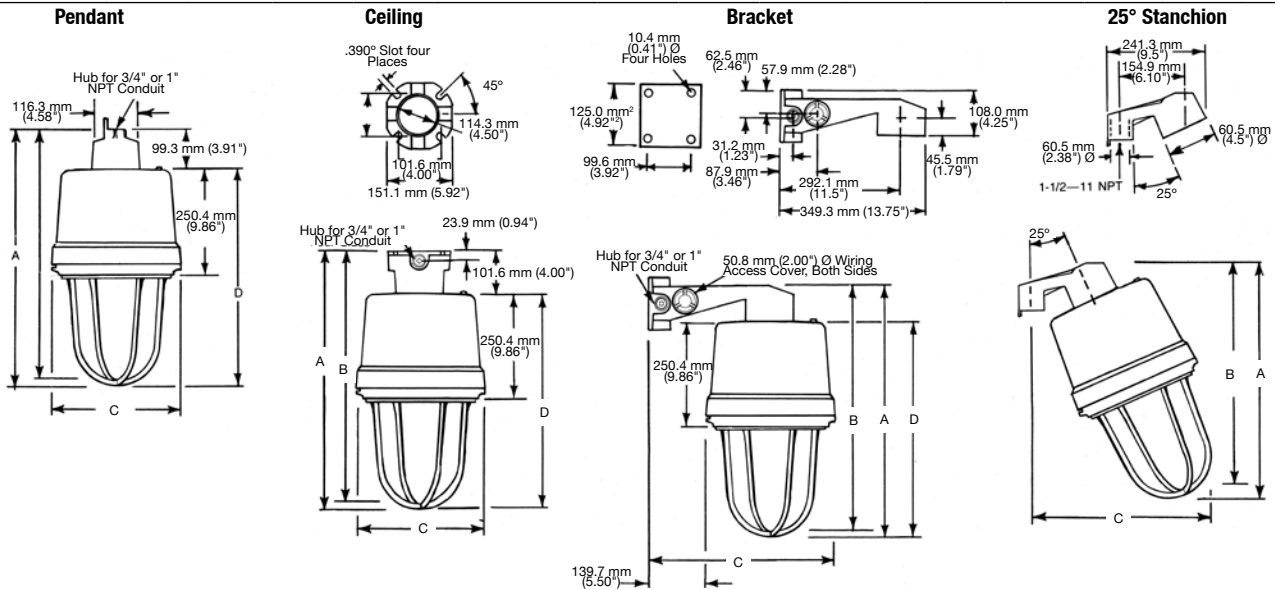
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Class I, Zone 1 and 2; IIB, IIA  
Class II, Division 1, Groups E, F, G  
Class II, Division 2, Groups F, G  
Class III

### CEC:

CSA Type 4X  
Exd IIB, Zone 1

### Dimensions in Millimeters (Inches)



|                | Pendant          |                  |                  |                  | Ceiling          |                  |                  |                  | Bracket          |                  |                  |                  | 25° Stanchion    |                  |                  |
|----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                | A                | B                | C                | D                | A                | B                | C                | D                | A                | B                | C                | D                | A                | B                | C                |
| 50-250<br>W ①  | 546.1<br>(21.50) | 520.7<br>(20.50) | 304.8<br>(12.00) | 447.3<br>(17.61) | 548.9<br>(21.61) | 523.5<br>(20.61) | 304.8<br>(12.00) | 447.3<br>(17.61) | 555.2<br>(21.86) | 529.8<br>(20.86) | 444.5<br>(17.50) | 447.3<br>(17.61) | 495.3<br>(19.50) | 475.0<br>(18.70) | 406.4<br>(16.00) |
| 250-400<br>W ② | 522.3<br>(24.50) | 596.9<br>(23.50) | 304.8<br>(12.00) | 507.1<br>(20.36) | 618.7<br>(24.36) | 507.1<br>(20.36) | 304.8<br>(12.00) | 507.1<br>(20.36) | 625.1<br>(24.61) | 599.7<br>(23.61) | 444.5<br>(17.50) | 507.1<br>(20.36) | 563.9<br>(22.20) | 538.5<br>(21.20) | 444.5<br>(17.50) |

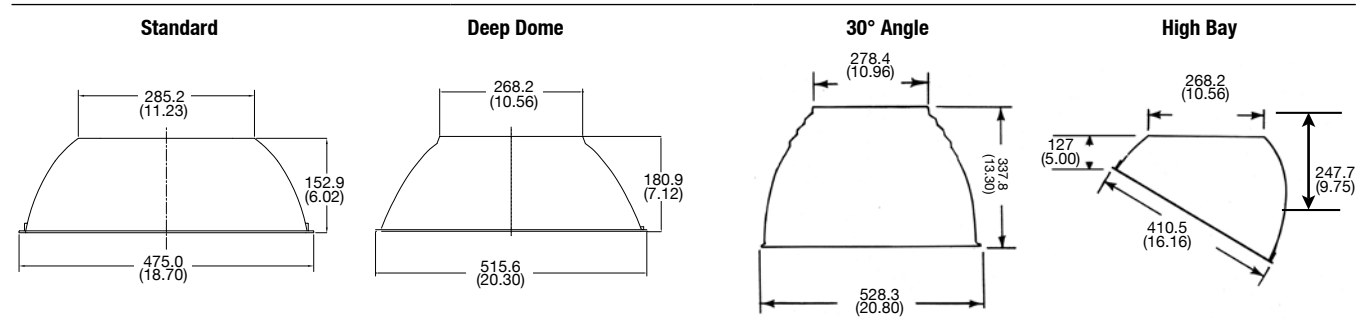
### Fixture and Accessory Weights kg (lb)

| Fixture Size         | Fixture Weight | Reflector Weight | Guard Weight |
|----------------------|----------------|------------------|--------------|
| 50 W through 175 W   | 14.5 (31.97)   | 1.4 (3.09)       | 0.5 (1.10)   |
| 250 W PSMH/MH        | 16.9 (37.26)   | 1.4 (3.09)       | 0.5 (1.10)   |
| 250 W HPS            | 18.1 (39.90)   | 1.4 (3.09)       | 0.9 (1.98)   |
| 400 W PSMH, 400 W MH | 20.4 (44.97)   | 1.4 (3.09)       | 0.9 (1.98)   |

### Mounting Hood Weights kgs (lbs)

| Pendant | Ceiling | Bracket | Stanchion |
|---------|---------|---------|-----------|
| 0.9 (2) | 1.8 (4) | 2.7 (6) | 0.9 (2)   |

### Reflector Dimensions in Millimeters (Inches)



① 50, 70, 100 and 150 W HPS; 175 W PSMH; 175 and 250 W MH.  
② 250 and 400 W HPS; 250, and 400 W PSMH; 400 W MH.

# Code•Master™ 2 HID Factory Sealed Luminaires

## Explosionproof, Dust-Ignitionproof

\* Photometric data is based on a 100-watt clear HPS lamp (9,500 lumens). For candlepower values of fixtures with other lamps, use the following multipliers: 50 W HPS – 0.42 (4,000 lumens); 70 W HPS – 0.61 (6,300 lumens); and 150 W HPS – 1.68 (16,000 lumens).

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Exd IIB, Zone 1

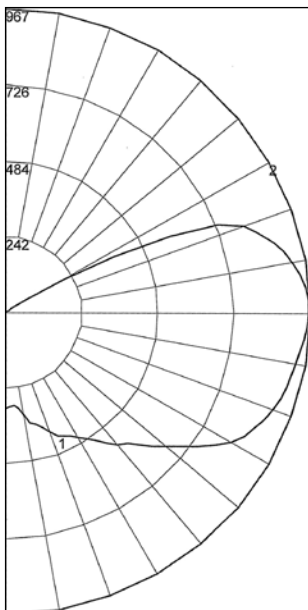
### Photometric Data

Total Luminaire Efficiency = 76.4%

#### CIE Type – Semi-Direct

| Plane    | Spacing Criteria |
|----------|------------------|
| 0-180    | 2.66             |
| 90-270   | 2.66             |
| Diagonal | 2.84             |

| Zone    | Lumens  |
|---------|---------|
| 0-10    | 29.80   |
| 10-20   | 106.54  |
| 20-30   | 202.92  |
| 30-40   | 318.52  |
| 40-50   | 468.31  |
| 50-60   | 670.49  |
| 60-70   | 866.67  |
| 70-80   | 976.61  |
| 80-90   | 1038.41 |
| 90-100  | 1042.18 |
| 100-110 | 927.00  |
| 110-120 | 551.82  |
| 120-130 | 51.82   |
| 130-140 | 2.51    |
| 140-150 | 0.25    |
| 150-160 | 0.00    |
| 160-170 | 0.00    |
| 170-180 | 0.00    |



REPORT NUMBER: CL10G

Lamps: 100 W High Pressure Sodium with Globe only

#### Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

| % Ceiling Rcc | % Walls Rw | 80 |    |    |    | 70 |    |    |    | 50 |    |    |    | 30 |    |    |    | 10 |    |    |    | 0  |    |    |    |
|---------------|------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|               |            | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0  |
| 0             | 84         | 84 | 84 | 84 | 84 | 79 | 79 | 79 | 79 | 70 | 70 | 70 | 61 | 61 | 61 | 53 | 53 | 53 | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| 1             | 72         | 66 | 61 | 56 | 56 | 66 | 61 | 57 | 52 | 53 | 49 | 46 | 45 | 42 | 40 | 38 | 36 | 34 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| 2             | 63         | 54 | 47 | 41 | 41 | 58 | 51 | 44 | 39 | 43 | 38 | 34 | 37 | 32 | 29 | 30 | 27 | 24 | 21 | 21 | 21 | 21 | 21 | 21 | 21 |
| 3             | 56         | 46 | 38 | 32 | 32 | 52 | 43 | 36 | 30 | 36 | 31 | 26 | 31 | 26 | 22 | 25 | 22 | 18 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| 4             | 51         | 40 | 32 | 26 | 26 | 47 | 37 | 30 | 24 | 31 | 25 | 21 | 26 | 22 | 18 | 22 | 18 | 14 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| 5             | 46         | 35 | 27 | 21 | 21 | 42 | 32 | 25 | 20 | 28 | 22 | 17 | 23 | 18 | 14 | 19 | 15 | 12 | 9  | 9  | 9  | 9  | 9  | 9  | 9  |
| 6             | 42         | 31 | 23 | 18 | 18 | 39 | 29 | 22 | 17 | 24 | 19 | 14 | 21 | 16 | 12 | 17 | 13 | 10 | 7  | 7  | 7  | 7  | 7  | 7  | 7  |
| 7             | 39         | 28 | 20 | 15 | 15 | 36 | 26 | 19 | 14 | 22 | 16 | 12 | 18 | 14 | 10 | 15 | 11 | 8  | 6  | 6  | 6  | 6  | 6  | 6  | 6  |
| 8             | 36         | 25 | 18 | 13 | 13 | 33 | 23 | 17 | 12 | 20 | 14 | 10 | 17 | 12 | 9  | 14 | 10 | 7  | 5  | 5  | 5  | 5  | 5  | 5  | 5  |
| 9             | 33         | 23 | 16 | 11 | 11 | 31 | 21 | 15 | 11 | 18 | 13 | 9  | 15 | 11 | 8  | 13 | 9  | 6  | 4  | 4  | 4  | 4  | 4  | 4  | 4  |
| 10            | 31         | 21 | 14 | 10 | 10 | 29 | 19 | 13 | 9  | 17 | 12 | 8  | 14 | 10 | 7  | 12 | 8  | 6  | 4  | 4  | 4  | 4  | 4  | 4  | 4  |

#### Zonal Lumen Summary

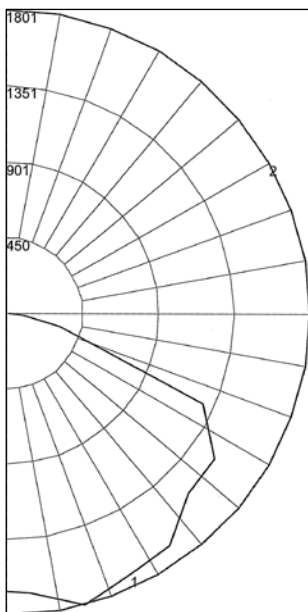
| Zone | Lumens  | % Lamp | % Fixture | Zone   | Lumens  | % Lamp | % Fixture |
|------|---------|--------|-----------|--------|---------|--------|-----------|
| 0-30 | 339.26  | 3.6    | 4.7       | 90-120 | 2521.83 | 26.5   | 34.8      |
| 0-40 | 657.79  | 6.9    | 9.1       | 90-130 | 2572.83 | 27.1   | 35.5      |
| 0-60 | 1796.59 | 18.9   | 24.8      | 90-150 | 2575.59 | 27.1   | 35.5      |
| 0-90 | 4678.28 | 49.2   | 64.5      | 90-180 | 2575.59 | 27.1   | 35.5      |
|      |         |        |           | 0-180  | 7253.87 | 76.4   | 100.0     |

Total Luminaire Efficiency = 71.3%

#### CIE Type – Direct

| Plane    | Spacing Criteria |
|----------|------------------|
| 0-180    | 1.54             |
| 90-270   | 1.54             |
| Diagonal | 1.66             |

| Zone    | Lumens  |
|---------|---------|
| 0-10    | 40.00   |
| 10-20   | 331.02  |
| 20-30   | 660.22  |
| 30-40   | 934.51  |
| 40-50   | 1131.33 |
| 50-60   | 1272.76 |
| 60-70   | 1322.68 |
| 70-80   | 826.95  |
| 80-90   | 254.44  |
| 90-100  | 0.00    |
| 100-110 | 0.00    |
| 110-120 | 0.00    |
| 120-130 | 0.00    |
| 130-140 | 0.00    |
| 140-150 | 0.00    |
| 150-160 | 0.00    |
| 160-170 | 0.00    |
| 170-180 | 0.00    |



REPORT NUMBER: CL10ST

Lamps: 100 W High Pressure Sodium with Standard Dome Reflector

#### Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

| % Ceiling Rcc | % Walls Rw | 80 |    |    |    | 70 |    |    |    | 50 |    |    |    | 30 |    |    |    | 10 |    |    |    | 0  |    |    |    |
|---------------|------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|               |            | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0  |
| 0             | 85         | 85 | 85 | 85 | 85 | 83 | 83 | 83 | 83 | 79 | 79 | 79 | 76 | 76 | 76 | 73 | 73 | 73 | 71 | 71 | 71 | 71 | 71 | 71 | 71 |
| 1             | 76         | 71 | 68 | 64 | 64 | 74 | 70 | 66 | 63 | 67 | 64 | 61 | 64 | 61 | 59 | 61 | 59 | 57 | 56 | 56 | 56 | 56 | 56 | 56 | 56 |
| 2             | 67         | 60 | 54 | 49 | 49 | 65 | 59 | 53 | 49 | 56 | 51 | 47 | 54 | 50 | 46 | 51 | 48 | 45 | 43 | 43 | 43 | 43 | 43 | 43 | 43 |
| 3             | 60         | 51 | 44 | 39 | 39 | 58 | 50 | 44 | 38 | 48 | 42 | 38 | 46 | 41 | 37 | 44 | 40 | 36 | 34 | 34 | 34 | 34 | 34 | 34 | 34 |
| 4             | 54         | 44 | 37 | 31 | 31 | 52 | 43 | 36 | 31 | 41 | 35 | 31 | 40 | 34 | 30 | 38 | 33 | 30 | 28 | 28 | 28 | 28 | 28 | 28 | 28 |
| 5             | 49         | 39 | 31 | 26 | 26 | 48 | 38 | 31 | 26 | 36 | 30 | 25 | 35 | 29 | 25 | 33 | 29 | 25 | 23 | 23 | 23 | 23 | 23 | 23 | 23 |
| 6             | 45         | 34 | 27 | 22 | 22 | 43 | 33 | 27 | 22 | 32 | 26 | 21 | 31 | 25 | 21 | 30 | 25 | 21 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| 7             | 41         | 30 | 23 | 19 | 19 | 40 | 30 | 23 | 18 | 29 | 23 | 18 | 28 | 22 | 18 | 27 | 22 | 18 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| 8             | 38         | 27 | 21 | 16 | 16 | 37 | 27 | 20 | 16 | 26 | 20 | 16 | 25 | 20 | 16 | 24 | 19 | 16 | 14 | 14 | 14 | 14 | 14 | 14 | 14 |
| 9             | 35         | 25 | 18 | 14 | 14 | 34 | 24 | 18 | 14 | 24 | 18 | 14 | 23 | 18 | 14 | 22 | 17 | 14 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| 10            | 33         | 23 | 17 | 12 | 12 | 32 | 22 | 16 | 12 | 22 | 16 | 12 | 21 | 16 | 12 | 20 | 15 | 12 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |

#### Zonal Lumen Summary

| Zone | Lumens  | % Lamp | % Fixture | Zone   | Lumens  | % Lamp | % Fixture |
|------|---------|--------|-----------|--------|---------|--------|-----------|
| 0-30 | 1031.23 | 10.9   | 15.2      | 90-120 | 0.00    | 0.0    | 0.0       |
| 0-40 | 1965.74 | 20.7   | 29.0      | 90-130 | 0.00    | 0.0    | 0.0       |
| 0-60 | 4369.83 | 46.0   | 64.5      | 90-150 | 0.00    | 0.0    | 0.0       |
| 0-90 | 6773.90 | 71.3   | 100.0     | 90-180 | 0.00    | 0.0    | 0.0       |
|      |         |        |           | 0-180  | 6773.90 | 71.3   | 100.0     |

# Code•Master™ 2 HID Factory Sealed Luminaires

## Explosionproof, Dust-Ignitionproof

\* Photometric data is based on a 100-watt clear High Pressure Sodium lamp (9,500 lumens). For candlepower values of fixtures with other lamps, use the following multipliers: 50 W HPS – 0.42 (4,000 lumens); 70 W HPS – 0.61 (6,300 lumens); and 150 W HPS – 1.68 (16,000 lumens).

### NEC:

Class I, Division 1 and 2, Groups C, D  
Class II, Division 1 and 2, Groups E, F, G  
Class III  
Marine Type Electric Fixtures  
Outside Type (Salt Water)

### CEC:

Class I, Division 1 and 2, Groups B, C, D  
Class I, Zone 1 and 2; IIB, IIA  
Class II, Division 1, Groups E, F, G  
Class II, Division 2, Groups F, G  
Class III

### CEC:

CSA Type 4X  
Exd IIB, Zone 1

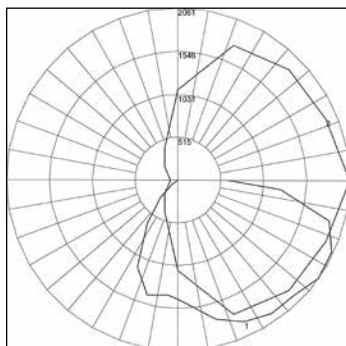
### Photometric Data

Total Luminaire Efficiency = 61.9%

#### CIE Type – Direct

| Plane    | Spacing Criteria |
|----------|------------------|
| 0-180    | 1.96             |
| 90-270   | 1.62             |
| Diagonal | 1.50             |

| Zone    | Lumens |
|---------|--------|
| 0-10    | 34.59  |
| 10-20   | 289.50 |
| 20-30   | 587.71 |
| 30-40   | 825.38 |
| 40-50   | 944.04 |
| 50-60   | 952.84 |
| 60-70   | 900.69 |
| 70-80   | 740.88 |
| 80-90   | 607.55 |
| 90-100  | 0.00   |
| 100-110 | 0.00   |
| 110-120 | 0.00   |
| 120-130 | 0.00   |
| 130-140 | 0.00   |
| 140-150 | 0.00   |
| 150-160 | 0.00   |
| 160-170 | 0.00   |
| 170-180 | 0.00   |



REPORT NUMBER: **CL10AN**

Lamps: 100 W High Pressure Sodium with 30° Angle Dome Reflector

#### Coefficients of Utilization – Zonal Cavity Method

##### Effective Floor Cavity Reflectance 0.20

| % Ceiling | Rcc | 80 |    |    |    | 70 |    |    |    | 50 |    |    |    | 30 |    |    |    | 10 |    |    |    | 0 |
|-----------|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|
| % Walls   | Rw  | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| 0         | 74  | 74 | 74 | 74 | 72 | 72 | 72 | 72 | 69 | 69 | 69 | 66 | 66 | 66 | 63 | 63 | 63 | 62 |    |    |    |   |
| 1         | 64  | 60 | 56 | 53 | 62 | 59 | 55 | 52 | 56 | 53 | 50 | 53 | 51 | 49 | 51 | 49 | 47 | 46 |    |    |    |   |
| 2         | 57  | 51 | 45 | 41 | 55 | 49 | 44 | 40 | 47 | 43 | 39 | 45 | 41 | 38 | 43 | 40 | 37 | 36 |    |    |    |   |
| 3         | 51  | 43 | 37 | 32 | 50 | 42 | 37 | 32 | 40 | 35 | 31 | 38 | 34 | 31 | 37 | 33 | 30 | 28 |    |    |    |   |
| 4         | 47  | 38 | 31 | 26 | 45 | 37 | 31 | 26 | 35 | 30 | 26 | 34 | 29 | 25 | 32 | 28 | 25 | 23 |    |    |    |   |
| 5         | 42  | 33 | 27 | 22 | 41 | 32 | 26 | 22 | 31 | 26 | 21 | 30 | 25 | 21 | 28 | 24 | 21 | 19 |    |    |    |   |
| 6         | 39  | 29 | 23 | 19 | 38 | 29 | 23 | 18 | 28 | 22 | 18 | 26 | 22 | 18 | 25 | 21 | 18 | 16 |    |    |    |   |
| 7         | 36  | 26 | 20 | 16 | 35 | 26 | 20 | 16 | 25 | 20 | 16 | 24 | 19 | 16 | 23 | 19 | 15 | 14 |    |    |    |   |
| 8         | 33  | 24 | 18 | 14 | 32 | 23 | 18 | 14 | 22 | 17 | 14 | 22 | 17 | 14 | 21 | 17 | 13 | 12 |    |    |    |   |
| 9         | 31  | 22 | 16 | 12 | 30 | 21 | 16 | 12 | 20 | 15 | 12 | 20 | 15 | 12 | 19 | 15 | 12 | 11 |    |    |    |   |
| 10        | 29  | 20 | 14 | 11 | 28 | 19 | 14 | 11 | 19 | 14 | 11 | 18 | 14 | 11 | 18 | 13 | 11 | 9  |    |    |    |   |

#### Zonal Lumen Summary

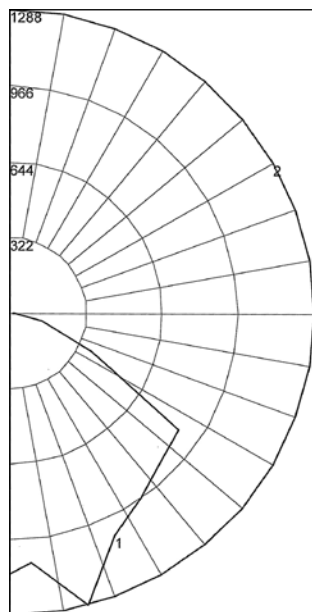
| Zone  | Lumens  | % Lamp | % Fixture | Zone   | Lumens | % Lamp | % Fixture |
|-------|---------|--------|-----------|--------|--------|--------|-----------|
| 0-30  | 911.80  | 9.6    | 15.5      | 90-120 | 0.0    | 0.0    | 0.0       |
| 0-40  | 1737.18 | 18.3   | 29.5      | 90-130 | 0.0    | 0.0    | 0.0       |
| 0-60  | 3634.06 | 38.3   | 61.8      | 90-150 | 0.0    | 0.0    | 0.0       |
| 0-90  | 5883.18 | 61.9   | 100.0     | 90-180 | 0.0    | 0.0    | 0.0       |
| 0-180 | 5883.18 | 61.9   | 100.0     |        |        |        |           |

Total Luminaire Efficiency = 37.8%

#### CIE Type – Direct

| Plane    | Spacing Criteria |
|----------|------------------|
| 0-180    | 1.36             |
| 90-270   | 1.36             |
| Diagonal | 1.54             |

| Zone    | Lumens |
|---------|--------|
| 0-10    | 26.07  |
| 10-20   | 224.04 |
| 20-30   | 437.71 |
| 30-40   | 551.18 |
| 40-50   | 656.83 |
| 50-60   | 743.35 |
| 60-70   | 592.81 |
| 70-80   | 265.53 |
| 80-90   | 94.52  |
| 90-100  | 0.00   |
| 100-110 | 0.00   |
| 110-120 | 0.00   |
| 120-130 | 0.00   |
| 130-140 | 0.00   |
| 140-150 | 0.00   |
| 150-160 | 0.00   |
| 160-170 | 0.00   |
| 170-180 | 0.00   |



REPORT NUMBER: **CL10DD**

Lamps: 100 W High Pressure Sodium with Deep Dome Reflector

#### Coefficients of Utilization – Zonal Cavity Method

##### Effective Floor Cavity Reflectance 0.20

| % Ceiling | Rcc | 80 |    |    |    | 70 |    |    |    | 50 |    |    |    | 30 |    |    |    | 10 |    |    |    | 0 |
|-----------|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|
| % Walls   | Rw  | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| 0         | 45  | 45 | 45 | 45 | 44 | 44 | 44 | 44 | 42 | 42 | 42 | 40 | 40 | 40 | 39 | 39 | 39 | 38 |    |    |    |   |
| 1         | 41  | 39 | 37 | 35 | 40 | 38 | 36 | 35 | 36 | 35 | 34 | 35 | 34 | 33 | 33 | 32 | 32 | 31 |    |    |    |   |
| 2         | 37  | 33 | 30 | 28 | 36 | 32 | 30 | 28 | 31 | 29 | 27 | 30 | 28 | 26 | 29 | 27 | 26 | 25 |    |    |    |   |
| 3         | 33  | 29 | 25 | 22 | 32 | 28 | 25 | 22 | 27 | 24 | 22 | 26 | 23 | 21 | 25 | 23 | 21 | 20 |    |    |    |   |
| 4         | 30  | 25 | 21 | 18 | 29 | 24 | 21 | 18 | 23 | 20 | 18 | 22 | 20 | 18 | 22 | 19 | 18 | 17 |    |    |    |   |
| 5         | 27  | 22 | 18 | 15 | 26 | 21 | 18 | 15 | 21 | 17 | 15 | 20 | 17 | 15 | 19 | 17 | 15 | 14 |    |    |    |   |
| 6         | 25  | 19 | 16 | 13 | 24 | 19 | 16 | 13 | 18 | 15 | 13 | 18 | 15 | 13 | 17 | 15 | 13 | 12 |    |    |    |   |
| 7         | 23  | 17 | 14 | 11 | 22 | 17 | 14 | 11 | 16 | 13 | 11 | 16 | 13 | 11 | 15 | 13 | 11 | 10 |    |    |    |   |
| 8         | 21  | 16 | 12 | 10 | 21 | 15 | 12 | 10 | 15 | 12 | 10 | 14 | 12 | 10 | 14 | 11 | 10 | 9  |    |    |    |   |
| 9         | 20  | 14 | 11 | 9  | 19 | 14 | 11 | 9  | 13 | 11 | 9  | 13 | 10 | 8  | 13 | 10 | 8  | 8  |    |    |    |   |
| 10        | 18  | 13 | 10 | 8  | 18 | 13 | 10 | 8  | 12 | 10 | 8  | 12 | 9  | 8  | 12 | 9  | 7  | 7  |    |    |    |   |

#### Zonal Lumen Summary

| Zone  | Lumens  | % Lamp | % Fixture | Zone   | Lumens | % Lamp | % Fixture |
|-------|---------|--------|-----------|--------|--------|--------|-----------|
| 0-30  | 687.82  | 7.2    | 19.1      | 90-120 | 0.0    | 0.0    | 0.0       |
| 0-40  | 1239.00 | 13.0   | 34.5      | 90-130 | 0.0    | 0.0    | 0.0       |
| 0-60  | 2639.18 | 27.8   | 73.5      | 90-150 | 0.0    | 0.0    | 0.0       |
| 0-90  | 3592.04 | 37.8   | 100.0     | 90-180 | 0.0    | 0.0    | 0.0       |
| 0-180 | 3592.04 | 37.8   | 100.0     |        |        |        |           |

# Code•Master™ 2 HID Factory Sealed Luminaires

## Explosionproof, Dust-Ignitionproof

\* Photometric data is based on a 400-watt clear Pulse Start Metal Halide lamp (34,000 lumens). For candlepower values of fixtures with other lamps, use the following multipliers: 400 W HPS – 1.13 (50,000 lumens); and 250 W HPS – 0.68 (30,000 lumens).

**NEC:**  
Class I, Division 1 and 2, Groups C, D  
Class II, Division 1 and 2, Groups E, F, G  
Class III  
Marine Type Electric Fixtures  
Outside Type (Salt Water)

**CEC:**  
Class I, Division 1 and 2, Groups B, C, D  
Class I, Zone 1 and 2; IIB, IIA  
Class II, Division 1, Groups E, F, G  
Class II, Division 2, Groups F, G  
Class III

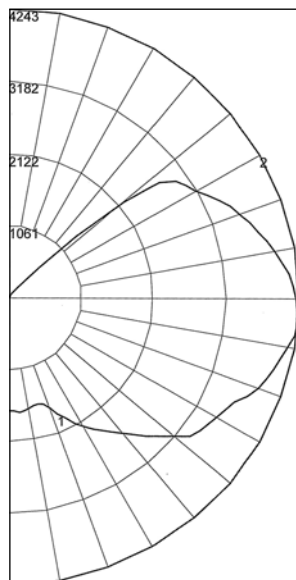
**CEC:**  
CSA Type 4X  
Exd IIB, Zone 1

### Photometric Data

Total Luminaire Efficiency = 81.9%

CIE Type – General Diffuse

| Zone    | Lumens  |
|---------|---------|
| 0-10    | 161.29  |
| 10-20   | 470.38  |
| 20-30   | 918.96  |
| 30-40   | 1511.24 |
| 40-50   | 2242.10 |
| 50-60   | 3052.29 |
| 60-70   | 3653.41 |
| 70-80   | 4255.87 |
| 80-90   | 4603.15 |
| 90-100  | 4476.83 |
| 100-110 | 4007.91 |
| 110-120 | 3380.83 |
| 120-130 | 2599.55 |
| 130-140 | 672.85  |
| 140-150 | 18.11   |
| 150-160 | 2.59    |
| 160-170 | 1.21    |
| 170-180 | 0.65    |



REPORT NUMBER: CP40G

Lamps: 400 W Pulse Start Metal Halide with Globe only

### Coefficients of Utilization – Zonal Cavity Method

#### Effective Floor Cavity Reflectance 0.20

| % Ceiling | Rcc | 80 |    |    |    | 70 |    |    |    | 50 |    |    | 30 |    |    | 10 |    |    | 0  |
|-----------|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| % Walls   | Rw  | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0  |
| 0         |     | 89 | 89 | 89 | 89 | 83 | 83 | 83 | 83 | 72 | 72 | 72 | 61 | 61 | 61 | 52 | 52 | 52 | 47 |
| 1         |     | 76 | 70 | 65 | 60 | 70 | 65 | 60 | 56 | 55 | 51 | 48 | 46 | 43 | 40 | 38 | 35 | 33 | 29 |
| 2         |     | 67 | 59 | 51 | 45 | 62 | 54 | 48 | 42 | 45 | 40 | 36 | 37 | 33 | 30 | 30 | 27 | 24 | 20 |
| 3         |     | 60 | 50 | 42 | 36 | 55 | 46 | 39 | 33 | 39 | 33 | 28 | 32 | 27 | 23 | 25 | 22 | 19 | 15 |
| 4         |     | 55 | 43 | 35 | 29 | 50 | 40 | 32 | 27 | 33 | 27 | 23 | 27 | 22 | 19 | 22 | 18 | 15 | 12 |
| 5         |     | 50 | 38 | 30 | 24 | 45 | 35 | 28 | 22 | 29 | 23 | 19 | 24 | 19 | 15 | 19 | 15 | 12 | 9  |
| 6         |     | 45 | 34 | 26 | 20 | 41 | 31 | 24 | 18 | 26 | 20 | 16 | 21 | 16 | 13 | 17 | 13 | 10 | 8  |
| 7         |     | 42 | 30 | 22 | 17 | 38 | 28 | 21 | 16 | 23 | 18 | 13 | 19 | 14 | 11 | 15 | 11 | 9  | 6  |
| 8         |     | 39 | 27 | 20 | 15 | 35 | 25 | 18 | 14 | 21 | 15 | 12 | 17 | 13 | 9  | 14 | 10 | 7  | 5  |
| 9         |     | 36 | 25 | 18 | 13 | 33 | 23 | 16 | 12 | 19 | 14 | 10 | 16 | 11 | 8  | 13 | 9  | 6  | 5  |
| 10        |     | 33 | 22 | 16 | 11 | 31 | 21 | 15 | 10 | 18 | 12 | 9  | 15 | 10 | 7  | 12 | 8  | 6  | 4  |

### Zonal Lumen Summary

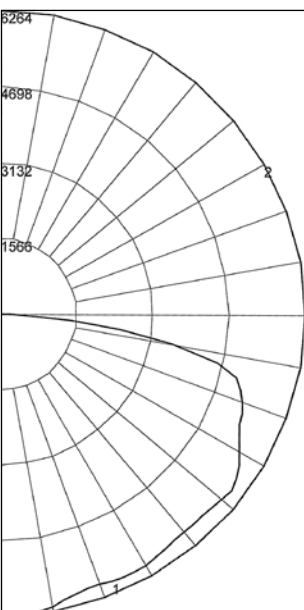
| Zone | Lumens   | % Lamp | % Fixture | Zone   | Lumens   | % Lamp | % Fixture |
|------|----------|--------|-----------|--------|----------|--------|-----------|
| 0-30 | 1550.63  | 3.5    | 4.3       | 90-120 | 11865.57 | 27.0   | 32.9      |
| 0-40 | 3061.87  | 7.0    | 8.5       | 90-130 | 14465.12 | 32.9   | 40.1      |
| 0-60 | 8356.25  | 19.0   | 23.2      | 90-150 | 15156.08 | 34.4   | 40.1      |
| 0-90 | 20868.68 | 47.4   | 57.9      | 90-180 | 15160.53 | 34.5   | 42.1      |
|      |          |        |           | 0-180  | 36029.22 | 81.9   | 100.0     |

Total Luminaire Efficiency = 70.4%

CIE Type – Direct

| Plane    | Spacing Criteria |
|----------|------------------|
| 0-180    | 1.46             |
| 90-270   | 1.46             |
| Diagonal | 1.70             |

| Zone    | Lumens  |
|---------|---------|
| 0-10    | 595.04  |
| 10-20   | 1709.44 |
| 20-30   | 2776.90 |
| 30-40   | 3730.18 |
| 40-50   | 4573.20 |
| 50-60   | 5290.95 |
| 60-70   | 5418.07 |
| 70-80   | 5086.12 |
| 80-90   | 1757.09 |
| 90-100  | 33.71   |
| 100-110 | 0.00    |
| 110-120 | 0.00    |
| 120-130 | 0.00    |
| 130-140 | 0.00    |
| 140-150 | 0.00    |
| 150-160 | 0.00    |
| 160-170 | 0.00    |
| 170-180 | 0.00    |



REPORT NUMBER: CP40ST

Lamps: 400 W Pulse Start Metal Halide with Standard Dome Reflector

### Coefficients of Utilization – Zonal Cavity Method

#### Effective Floor Cavity Reflectance 0.20

| % Ceiling | Rcc | 80 |    |    |    | 70 |    |    |    | 50 |    |    | 30 |    |    | 10 |    |    | 0  |
|-----------|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| % Walls   | Rw  | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0  |
| 0         |     | 84 | 84 | 84 | 84 | 82 | 82 | 82 | 82 | 78 | 78 | 78 | 75 | 75 | 75 | 72 | 72 | 72 | 70 |
| 1         |     | 74 | 69 | 65 | 62 | 72 | 68 | 64 | 60 | 64 | 61 | 58 | 62 | 59 | 57 | 59 | 57 | 55 | 53 |
| 2         |     | 65 | 58 | 52 | 47 | 63 | 57 | 51 | 46 | 54 | 49 | 45 | 51 | 47 | 44 | 49 | 46 | 43 | 41 |
| 3         |     | 58 | 49 | 42 | 37 | 57 | 48 | 42 | 36 | 46 | 40 | 36 | 44 | 39 | 35 | 42 | 38 | 34 | 32 |
| 4         |     | 53 | 43 | 35 | 30 | 51 | 42 | 35 | 30 | 40 | 34 | 29 | 38 | 33 | 29 | 36 | 32 | 28 | 26 |
| 5         |     | 48 | 38 | 30 | 25 | 46 | 37 | 30 | 25 | 35 | 29 | 24 | 34 | 28 | 24 | 32 | 27 | 24 | 22 |
| 6         |     | 44 | 33 | 26 | 21 | 43 | 33 | 26 | 21 | 31 | 25 | 21 | 30 | 25 | 21 | 29 | 24 | 20 | 19 |
| 7         |     | 41 | 30 | 23 | 18 | 39 | 29 | 23 | 18 | 28 | 22 | 18 | 27 | 22 | 18 | 26 | 21 | 18 | 16 |
| 8         |     | 38 | 27 | 21 | 16 | 37 | 27 | 20 | 16 | 26 | 20 | 16 | 25 | 19 | 16 | 24 | 19 | 15 | 14 |
| 9         |     | 35 | 25 | 18 | 14 | 34 | 24 | 18 | 14 | 23 | 18 | 14 | 23 | 18 | 14 | 22 | 17 | 14 | 12 |
| 10        |     | 33 | 23 | 17 | 13 | 32 | 22 | 17 | 13 | 22 | 16 | 13 | 21 | 16 | 12 | 20 | 16 | 12 | 11 |

### Zonal Lumen Summary

| Zone | Lumens   | % Lamp | % Fixture | Zone   | Lumens  | % Lamp | % Fixture |
|------|----------|--------|-----------|--------|---------|--------|-----------|
| 0-30 | 5081.38  | 11.5   | 16.4      | 90-120 | 33.71   | 0.1    | 0.1       |
| 0-40 | 8811.56  | 20.0   | 28.5      | 90-130 | 33.71   | 0.1    | 0.1       |
| 0-60 | 18675.71 | 42.4   | 60.3      | 90-150 | 33.71   | 0.1    | 0.1       |
| 0-90 | 30936.99 | 70.3   | 99.9      | 90-180 | 33.71   | 0.1    | 0.1       |
|      |          |        |           | 0-180  | 30970.7 | 70.4   | 100.0     |

# Code•Master™ 2 HID Factory Sealed Luminaires

## Explosionproof, Dust-Ignitionproof

\* Photometric data is based on a 400-watt clear Pulse Start Metal Halide lamp (34,000 lumens). For candlepower values of fixtures with other lamps, use the following multipliers: 400 W HPS – 1.13 (50,000 lumens); and 250 W HPS – 0.68 (30,000 lumens).

### NEC:

Class I, Division 1 and 2, Groups C, D  
Class II, Division 1 and 2, Groups E, F, G  
Class III  
Marine Type Electric Fixtures  
Outside Type (Salt Water)

### CEC:

Class I, Division 1 and 2, Groups B, C, D  
Class I, Zone 1 and 2; IIB, IIA  
Class II, Division 1, Groups E, F, G  
Class II, Division 2, Groups F, G  
Class III

### CEC:

CSA Type 4X  
Exd IIB, Zone 1

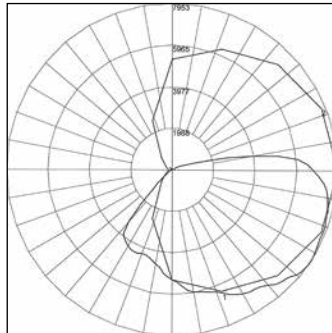
### Photometric Data

Total Luminaire Efficiency = 62.5%

#### CIE Type – Direct

| Plane    | Spacing Criteria |
|----------|------------------|
| 0-180    | 2.02             |
| 90-270   | 1.48             |
| Diagonal | 1.64             |

| Zone    | Lumens  |
|---------|---------|
| 0-10    | 503.08  |
| 10-20   | 1461.14 |
| 20-30   | 2434.06 |
| 30-40   | 3353.43 |
| 40-50   | 3867.50 |
| 50-60   | 3954.40 |
| 60-70   | 3752.38 |
| 70-80   | 3368.71 |
| 80-90   | 2643.39 |
| 90-100  | 1531.50 |
| 100-110 | 421.63  |
| 110-120 | 86.74   |
| 120-130 | 65.68   |
| 130-140 | 20.81   |
| 140-150 | 11.94   |
| 150-160 | 7.93    |
| 160-170 | 4.46    |
| 170-180 | 1.47    |



REPORT NUMBER: CP40AN

Lamps: 400 W Pulse Start Metal Halide with 30° Angle Dome Reflector

#### Coefficients of Utilization – Zonal Cavity Method

##### Effective Floor Cavity Reflectance 0.20

| % Ceiling | Rcc | 80 |    |    |    | 70 |    |    |    | 50 |    |    |    | 30 |    |    |    | 10 |    |    |    | 0 |
|-----------|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|
| % Walls   | Rw  | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| 0         | 73  | 73 | 73 | 73 | 71 | 71 | 71 | 71 | 67 | 67 | 67 | 63 | 63 | 63 | 59 | 59 | 59 | 58 |    |    |    |   |
| 1         | 64  | 60 | 56 | 53 | 62 | 58 | 55 | 52 | 54 | 52 | 49 | 51 | 49 | 47 | 48 | 46 | 44 | 42 |    |    |    |   |
| 2         | 57  | 51 | 45 | 41 | 55 | 49 | 44 | 40 | 46 | 42 | 38 | 43 | 40 | 37 | 40 | 38 | 35 | 33 |    |    |    |   |
| 3         | 51  | 44 | 38 | 33 | 49 | 42 | 37 | 32 | 39 | 35 | 31 | 37 | 33 | 30 | 35 | 31 | 26 | 27 |    |    |    |   |
| 4         | 47  | 38 | 32 | 27 | 45 | 37 | 31 | 26 | 35 | 29 | 25 | 32 | 28 | 25 | 30 | 27 | 24 | 22 |    |    |    |   |
| 5         | 43  | 34 | 27 | 23 | 41 | 33 | 27 | 22 | 31 | 25 | 22 | 29 | 24 | 21 | 27 | 23 | 20 | 19 |    |    |    |   |
| 6         | 39  | 30 | 24 | 19 | 38 | 29 | 23 | 19 | 27 | 22 | 18 | 26 | 21 | 18 | 24 | 20 | 17 | 16 |    |    |    |   |
| 7         | 36  | 27 | 21 | 17 | 35 | 26 | 21 | 17 | 25 | 20 | 16 | 23 | 19 | 16 | 22 | 18 | 15 | 14 |    |    |    |   |
| 8         | 34  | 24 | 19 | 15 | 32 | 24 | 18 | 15 | 22 | 18 | 14 | 21 | 17 | 14 | 20 | 16 | 13 | 12 |    |    |    |   |
| 9         | 31  | 22 | 17 | 13 | 30 | 22 | 16 | 13 | 21 | 16 | 13 | 20 | 15 | 12 | 19 | 15 | 12 | 11 |    |    |    |   |
| 10        | 29  | 20 | 15 | 12 | 28 | 20 | 15 | 12 | 19 | 14 | 11 | 18 | 14 | 11 | 17 | 13 | 11 | 10 |    |    |    |   |

#### Zonal Lumen Summary

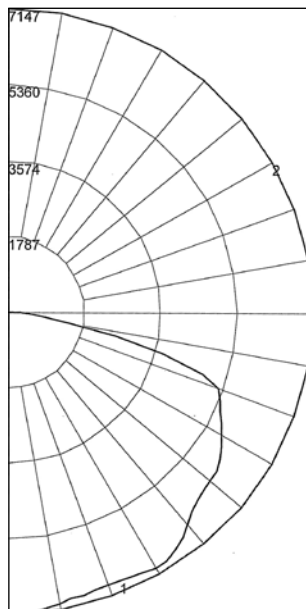
| Zone | Lumens   | % Lamp | % Fixture | Zone   | Lumens   | % Lamp | % Fixture |
|------|----------|--------|-----------|--------|----------|--------|-----------|
| 0-30 | 4398.28  | 10.0   | 16.0      | 90-120 | 2039.87  | 4.6    | 7.4       |
| 0-40 | 7751.71  | 17.6   | 28.2      | 90-130 | 2105.55  | 4.8    | 7.7       |
| 0-60 | 15573.61 | 35.4   | 56.7      | 90-150 | 2138.30  | 4.9    | 7.7       |
| 0-90 | 25338.08 | 57.6   | 92.2      | 90-180 | 2152.16  | 4.9    | 7.8       |
|      |          |        |           | 0-180  | 27490.24 | 62.5   | 100.0     |

Total Luminaire Efficiency = 69.1%

#### CIE Type – Direct

| Plane    | Spacing Criteria |
|----------|------------------|
| 0-180    | 1.48             |
| 90-270   | 1.48             |
| Diagonal | 1.62             |

| Zone    | Lumens  |
|---------|---------|
| 0-10    | 676.92  |
| 10-20   | 1962.51 |
| 20-30   | 3199.12 |
| 30-40   | 4281.42 |
| 40-50   | 4889.12 |
| 50-60   | 5408.09 |
| 60-70   | 5456.18 |
| 70-80   | 3822.90 |
| 80-90   | 693.25  |
| 90-100  | 20.14   |
| 100-110 | 0.00    |
| 110-120 | 0.00    |
| 120-130 | 0.00    |
| 130-140 | 0.00    |
| 140-150 | 0.00    |
| 150-160 | 0.00    |
| 160-170 | 0.00    |
| 170-180 | 0.00    |



REPORT NUMBER: CP40DD

Lamps: 400 W Pulse Start Metal Halide with Deep Dome Reflector

#### Coefficients of Utilization – Zonal Cavity Method

##### Effective Floor Cavity Reflectance 0.20

| % Ceiling | Rcc | 80 |    |    |    | 70 |    |    |    | 50 |    |    |    | 30 |    |    |    | 10 |    |    |    | 0 |
|-----------|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|
| % Walls   | Rw  | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| 0         | 82  | 82 | 82 | 82 | 80 | 80 | 80 | 80 | 77 | 77 | 77 | 73 | 73 | 73 | 70 | 70 | 70 | 69 |    |    |    |   |
| 1         | 74  | 70 | 66 | 63 | 72 | 68 | 65 | 62 | 65 | 63 | 60 | 63 | 60 | 58 | 60 | 58 | 57 | 55 |    |    |    |   |
| 2         | 66  | 59 | 54 | 49 | 64 | 58 | 53 | 49 | 55 | 51 | 47 | 53 | 49 | 46 | 51 | 48 | 45 | 44 |    |    |    |   |
| 3         | 59  | 51 | 44 | 39 | 57 | 50 | 44 | 39 | 48 | 42 | 38 | 46 | 41 | 38 | 44 | 40 | 37 | 35 |    |    |    |   |
| 4         | 54  | 44 | 38 | 32 | 52 | 43 | 37 | 32 | 42 | 36 | 32 | 40 | 35 | 31 | 38 | 34 | 31 | 29 |    |    |    |   |
| 5         | 49  | 39 | 32 | 27 | 47 | 38 | 32 | 27 | 37 | 31 | 27 | 35 | 30 | 26 | 34 | 29 | 26 | 24 |    |    |    |   |
| 6         | 45  | 35 | 28 | 23 | 44 | 34 | 28 | 23 | 33 | 27 | 23 | 32 | 26 | 23 | 30 | 26 | 22 | 21 |    |    |    |   |
| 7         | 41  | 31 | 24 | 20 | 40 | 31 | 24 | 20 | 30 | 24 | 20 | 29 | 23 | 20 | 28 | 23 | 19 | 18 |    |    |    |   |
| 8         | 38  | 28 | 22 | 18 | 37 | 28 | 22 | 18 | 27 | 21 | 17 | 26 | 21 | 17 | 25 | 21 | 17 | 16 |    |    |    |   |
| 9         | 36  | 26 | 20 | 16 | 35 | 25 | 20 | 16 | 25 | 19 | 16 | 24 | 19 | 15 | 23 | 19 | 15 | 14 |    |    |    |   |
| 10        | 34  | 24 | 18 | 14 | 33 | 23 | 18 | 14 | 23 | 18 | 14 | 22 | 17 | 14 | 21 | 17 | 14 | 12 |    |    |    |   |

#### Zonal Lumen Summary

| Zone | Lumens   | % Lamp | % Fixture | Zone   | Lumens   | % Lamp | % Fixture |
|------|----------|--------|-----------|--------|----------|--------|-----------|
| 0-30 | 5838.56  | 13.3   | 19.2      | 90-120 | 20.14    | 0.0    | 0.1       |
| 0-40 | 10119.98 | 23.0   | 33.3      | 90-130 | 20.14    | 0.0    | 0.1       |
| 0-60 | 20417.19 | 46.4   | 67.1      | 90-150 | 20.14    | 0.0    | 0.1       |
| 0-90 | 30389.51 | 69.1   | 99.9      | 90-180 | 20.14    | 0.0    | 0.1       |
|      |          |        |           | 0-180  | 30409.65 | 69.1   | 100.0     |

# Code•Master™ 2 HID Factory Sealed Luminaires

## Explosionproof, Dust-Ignitionproof

\* Photometric data is based on a 400-watt clear Pulse Start Metal Halide lamp (34,000 lumens). For candlepower values of fixtures with other lamps, use the following multipliers: 400 W HPS – 1.13 (50,000 lumens); and 250 W HPS – 0.68 (30,000 lumens).

**NEC:**  
Class I, Division 1 and 2, Groups C, D  
Class II, Division 1 and 2, Groups E, F, G  
Class III  
Marine Type Electric Fixtures  
Outside Type (Salt Water)

**CEC:**  
Class I, Division 1 and 2, Groups B, C, D  
Class I, Zone 1 and 2; IIB, IIA  
Class II, Division 1, Groups E, F, G  
Class II, Division 2, Groups F, G  
Class III

**CEC:**  
CSA Type 4X  
Exd IIB, Zone 1

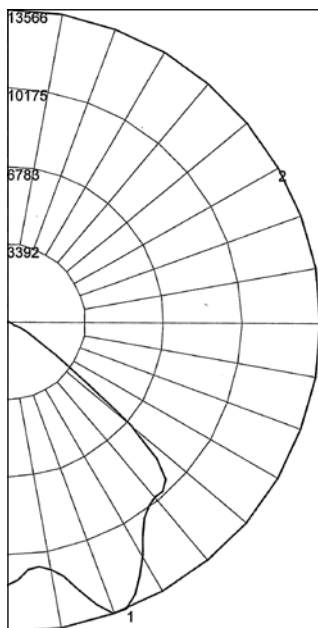
### Photometric Data

Total Luminaire Efficiency = 63.4%

CIE Type – Direct

| Plane    | Spacing Criteria |
|----------|------------------|
| 0-180    | 1.40             |
| 90-270   | 1.40             |
| Diagonal | 1.52             |

| Zone    | Lumens  |
|---------|---------|
| 0-10    | 1044.42 |
| 10-20   | 3491.70 |
| 20-30   | 5976.88 |
| 30-40   | 6632.58 |
| 40-50   | 7143.25 |
| 50-60   | 2844.46 |
| 60-70   | 634.65  |
| 70-80   | 115.54  |
| 80-90   | 20.82   |
| 90-100  | 1.23    |
| 100-110 | 0.00    |
| 110-120 | 0.00    |
| 120-130 | 0.00    |
| 130-140 | 0.00    |
| 140-150 | 0.00    |
| 150-160 | 0.00    |
| 160-170 | 0.00    |
| 170-180 | 0.00    |



REPORT NUMBER: CP40HB

Lamps: 400 W Pulse Start Metal Halide with High Bay Reflector

### Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

| % Ceiling | Rcc | 80 |    |    |    | 70 |    |    |    | 50 |    |    |    | 30 |    |    |    | 10 |    |    |    | 0  |
|-----------|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| % Walls   | Rw  | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0  |
|           | 0   | 76 | 76 | 76 | 76 | 74 | 74 | 74 | 74 | 70 | 70 | 70 | 67 | 67 | 67 | 65 | 65 | 65 | 65 | 65 | 65 | 63 |
|           | 1   | 71 | 69 | 67 | 65 | 69 | 67 | 65 | 64 | 65 | 63 | 62 | 62 | 61 | 60 | 60 | 59 | 58 | 57 | 57 | 57 | 57 |
|           | 2   | 66 | 62 | 59 | 56 | 64 | 61 | 58 | 55 | 59 | 56 | 54 | 57 | 55 | 53 | 55 | 53 | 52 | 50 | 50 | 50 | 50 |
|           | 3   | 61 | 56 | 52 | 48 | 60 | 55 | 51 | 48 | 53 | 50 | 47 | 51 | 49 | 46 | 50 | 48 | 46 | 44 | 44 | 44 | 44 |
|           | 4   | 57 | 50 | 46 | 42 | 55 | 50 | 45 | 42 | 48 | 44 | 42 | 47 | 44 | 41 | 45 | 43 | 40 | 39 | 39 | 39 | 39 |
|           | 5   | 53 | 46 | 41 | 37 | 51 | 45 | 40 | 37 | 44 | 40 | 37 | 43 | 39 | 36 | 42 | 38 | 36 | 35 | 35 | 35 | 35 |
|           | 6   | 49 | 42 | 37 | 33 | 48 | 41 | 36 | 33 | 40 | 36 | 33 | 39 | 35 | 32 | 38 | 35 | 32 | 31 | 31 | 31 | 31 |
|           | 7   | 46 | 38 | 33 | 30 | 44 | 37 | 33 | 29 | 37 | 32 | 29 | 36 | 32 | 29 | 35 | 31 | 29 | 28 | 28 | 28 | 28 |
|           | 8   | 42 | 35 | 30 | 27 | 42 | 34 | 30 | 26 | 34 | 29 | 26 | 33 | 29 | 26 | 32 | 29 | 26 | 25 | 25 | 25 | 25 |
|           | 9   | 40 | 32 | 27 | 24 | 39 | 32 | 27 | 24 | 31 | 27 | 24 | 30 | 26 | 24 | 30 | 26 | 24 | 23 | 23 | 23 | 23 |
|           | 10  | 37 | 29 | 25 | 22 | 36 | 29 | 25 | 22 | 29 | 24 | 22 | 28 | 24 | 22 | 27 | 24 | 21 | 20 | 20 | 20 | 20 |

### Zonal Lumen Summary

| Zone | Lumens   | % Lamp | % Fixture | Zone   | Lumens   | % Lamp | % Fixture |
|------|----------|--------|-----------|--------|----------|--------|-----------|
| 0-30 | 10513.00 | 23.9   | 37.7      | 90-120 | 1.23     | 0.0    | 0.0       |
| 0-40 | 17145.58 | 39.0   | 61.4      | 90-130 | 1.23     | 0.0    | 0.0       |
| 0-60 | 27133.29 | 61.7   | 97.2      | 90-150 | 1.23     | 0.0    | 0.0       |
| 0-90 | 27904.30 | 63.4   | 100.0     | 90-180 | 1.23     | 0.0    | 0.0       |
|      |          |        |           | 0-180  | 27905.53 | 63.4   | 100.0     |

HID/AREA: NEC/CEC EXPLOSIONPROOF

Appleton®