

# Mercmaster™ III 400 Luminaires

High Pressure Sodium and Pulse Start Metal Halide  
Enclosed and Gasketed Fixtures — Hazardous Locations

NEC/CEC: Class I, Division 2, Groups A, B, C, D | Class I, Zone 2, AEx nA nR IIC (Z2) | Class I, Zone 2, AEx/Ex nR IIC (ZB) | Class II, Division 1 and 2, Groups E, F, G | Class III | Simultaneous Exposure (Class I, Division 2/ Class II, Division 1) | Fixtures Outside Type (Salt Water) | Type 4X | IP66

## Applications

- Enclosed and gasketed fixtures suitable for use in:
  - Marine and wet locations
  - A wide range of industrial, chemical processing and other areas where flammable gases and vapors or combustible dusts are present under conditions defined by the National Electrical Code as Class I, Division 2; Class II, Division 1 and 2; and Class III
  - In applications involving medium and high mounting heights
  - In applications where energy efficient, high lumen output is required
  - The AEx nA nR Mercmaster III fixture is factory sealed and prevents vapors and gases from entering the globe chamber. There are no seals or putty required.
  - The AEx/Ex nR Mercmaster III fixture requires all wiring entries to be sealed.
  - Non-hazardous locations where severe weather conditions, excessive moisture, dirt, dust, corrosive atmosphere or high ambient temperatures are encountered
- Typical applications include:
  - Pulp and paper mills
  - Processing plants
  - Chemical plants
  - Oil refineries
  - Foundries
  - Manufacturing plants
  - Storage areas
  - Waste and sewage treatment
  - Other areas where dust, water, dirt and rough usage are a problem

## Features

- Superior corrosion resistance.
- Choice of light sources: high pressure sodium, and pulse start metal halide.
- Six mounting arrangements to suit any lighting layout: pendant, ceiling, wall bracket, 25° (angle) stanchion, 90° (straight) stanchion and cone.
- Hinge has high lip for added safety during installation and servicing. Hinge and bolt construction assures 360° compression at all points on ballast housing gasket for positive sealing. Swing away design of captive bolt and nut simplifies servicing.
- Choice of optical assemblies: prismatic globe or enclosed reflector with sealed lens; with or without guards.
- Wide choice of photometric distributions.
- All fixtures designed to perform in a +40 °C (+104 °F) ambient temperature. Selected fixtures are suitable for ambient temperatures up to +65 °C (+149 °F), for HPS up to -40 °C (-40 °F) and PSHM up to -30 °C (-22 °F).
- Mogul base porcelain lamp holder with nickel-plated contacts has +200 °C (+392 °F) rated welded leads, pre-wired to the ballast. Assures trouble-free operation in installations where high ambient temperatures are encountered.
- For electrical protection, a ground wire is provided on each Mercmaster to bond hood and ballast housing.
- Terminal blocks are provided for Zone 2 fixtures to facilitate wiring.
- Standard dome of 30° angle reflectors made of fiberglass reinforced white polyester. Highly resistant to corrosive atmospheres.
- A wide range of voltages available (120 to 600 Volt) and ballast types (CWA, Super CWA and REG LAG).
- One-piece ballast housing for each component provides even heat dissipation for cooler operation and longer ballast life.
- All Mercmaster mounting hoods have provision for easy field installation of fuses in fixtures (see fuse kit listings).



Pendant with  
Prismatic Glass Globe



Ceiling with  
Enclosed Reflector



25° Stanchion with  
Prismatic Glass Globe and Guard



90° Stanchion with  
Prismatic Glass Globe and Guard

## Standard Materials

- Mounting hoods and ballast bodies: cast copperfree (less than 4/10 of 1% copper) aluminum
- Reflectors: Fiberglass reinforced white polyester
- Guards, hardware and catch assemblies: stainless steel
- Globe: heat- and impact-resistant internally fluted glass
- Enclosed reflector: etched Alzak aluminum with sealed, tempered heat- and impact-resistant lens
- Body and globe gaskets: high-temperature silicone rubber

## Standard Finishes

- Mounting hoods and guards: epoxy powder coat, electrostatically applied for complete and uniform protection

## Options

- AEx nA nR fixtures are available with a Class I, Zone 2 rating. Add suffix **-Z2**. Only available for certain ballast types.
- AEx/Ex nR fixtures are available with a Class I, Zone 2 rating. Add suffix **-ZB**.

## NEC/CEC Certifications and Compliances

- cULus Listed: E10444
- UL Standard: ANSI/UL 844, 1598, 60079-0, 60079-15, 1598A
- CSA Standard: CSA C22.2 No. 250.0, C22.2 No. 137; CAN/CSA E60079-0, E60079-15
- 250 W PSMH not available in MT ballast. See Mercmaster III, 50-250 Luminaires.



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## High Pressure Sodium and Pulse Start Metal Halide Enclosed and Gasketed Fixtures — Hazardous Locations

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### Illustrated Features



**High Temperature Sockets**  
Mogul base high-temperature porcelain sockets.

**Aluminum Inner Reflector**  
Solid aluminum inner reflector (for refractor ballast housings only) improves photometric efficiency.

**Globe Chamber**  
Completely sealed from the ballast housing and outside vapors/air (nR).



**Vented Reflectors**  
Reflectors are thick, tough fiberglass-reinforced white polyester, vented for cooler operation. Quickly attach with furnished stainless steel screws.

**Terminal Blocks (Zone 2)**  
A seven-point terminal block is provided to facilitate wiring. Terminal block accommodates wire size ranging from #8 to #24 AWG.

**Stainless Steel Inserts**  
Ballast bodies have stainless steel threaded inserts to receive stainless steel screws for reflectors and guard. Prevents "freezing", allowing guards and reflectors to be easily removed and replaced at any time, without damage to the housing.



**Ballast Assembly**  
Utilizing non-sparking components avoiding the ignition of gases or vapors that may be present (nA).

**Mounting Hood and Globe Gaskets**  
Silicone rubber gasket seals out moisture, dirt and dust. Stays flexible, withstands high temperatures. Closure design assures uniform gasket compression.

**Electrical Protection**  
Ground wire provided to bond mounting hood to ballast housing.



**"Safety" High Hinge**  
Extra-high hinge provides additional protection against accidental ballast housing disengagement during installation or maintenance.

**Epoxy Finish**  
Ballast housing, hoods and guards are copperfree aluminum with epoxy powder coat finish.

**Photocell**  
Available for all fixtures except cone and ceiling mount. Installs through knock-out in mounting hood. Provides continuous ON-OFF dusk-to-dawn control.



**Cooler Operating Cone Hood**  
Larger sloped surface sheds dusts, dirt and combustible fibers providing better heat dissipation.



**Stainless Steel Latch Assembly**  
Captive, stainless steel latch assembly bolt and nut closes securely, resists attack of corrosive atmospheres. Swing-away design simplifies servicing.

**Prismatic Glass Globe and Enclosed Reflector**  
Heat-resistant globes and enclosed reflector thread into ballast housing and seal against a high temperature silicone rubber gasket.



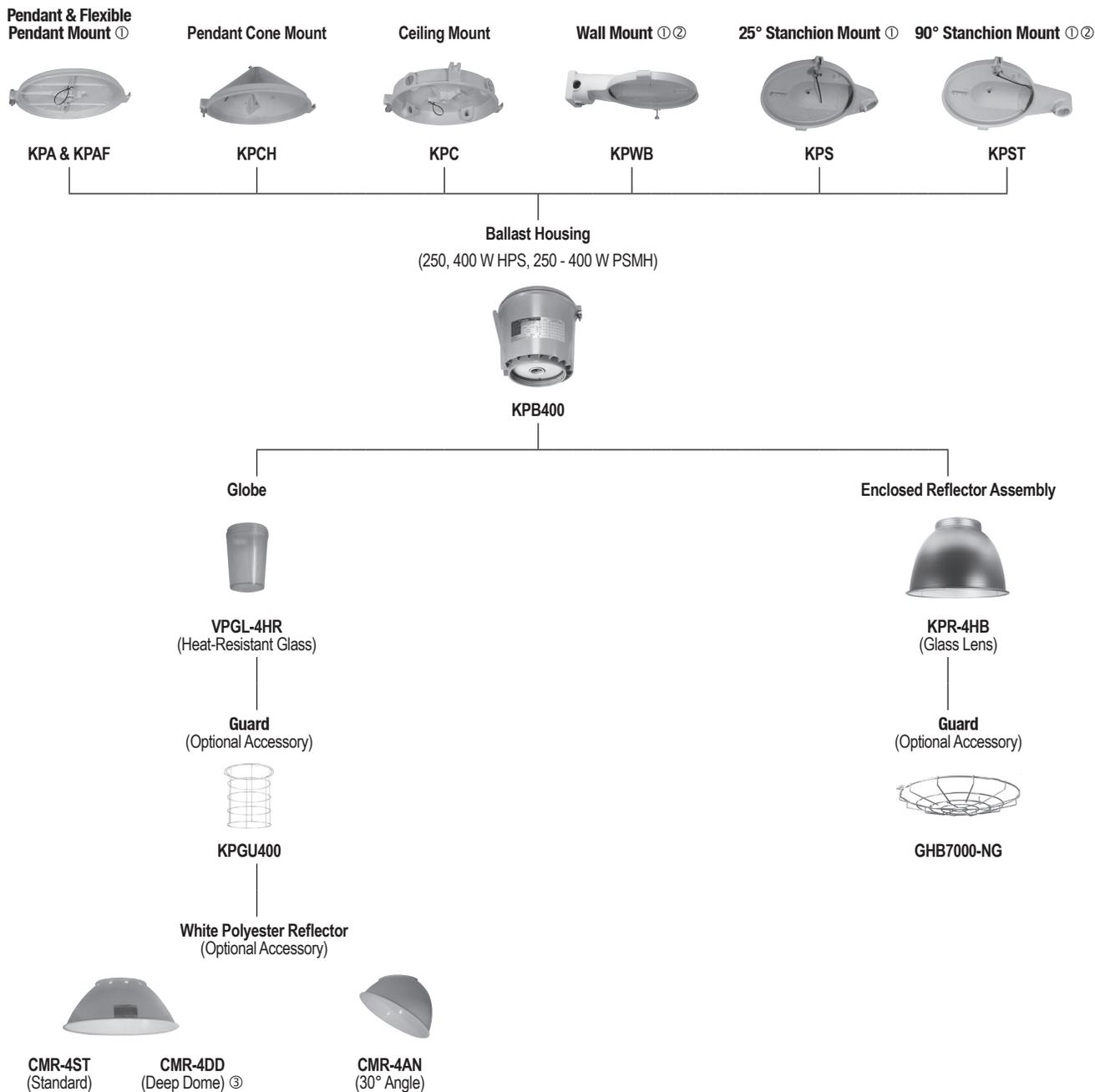
**Fuses**  
Two screws secure fuse kit to mounting boss in any Mercmaster mounting hood. Fuse included.

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### Family Tree — Mercmaster™ III 400 Luminaires



① Mounting hood with a 120 V or 208-277 V factory installed photocell is available.  
 ② Standard and deep dome reflectors may interfere with bottom conduit entry if used with KPST and KPWB mounting hoods.  
 ③ Fixtures when used with Deep Dome Reflectors are NOT UL Listed.

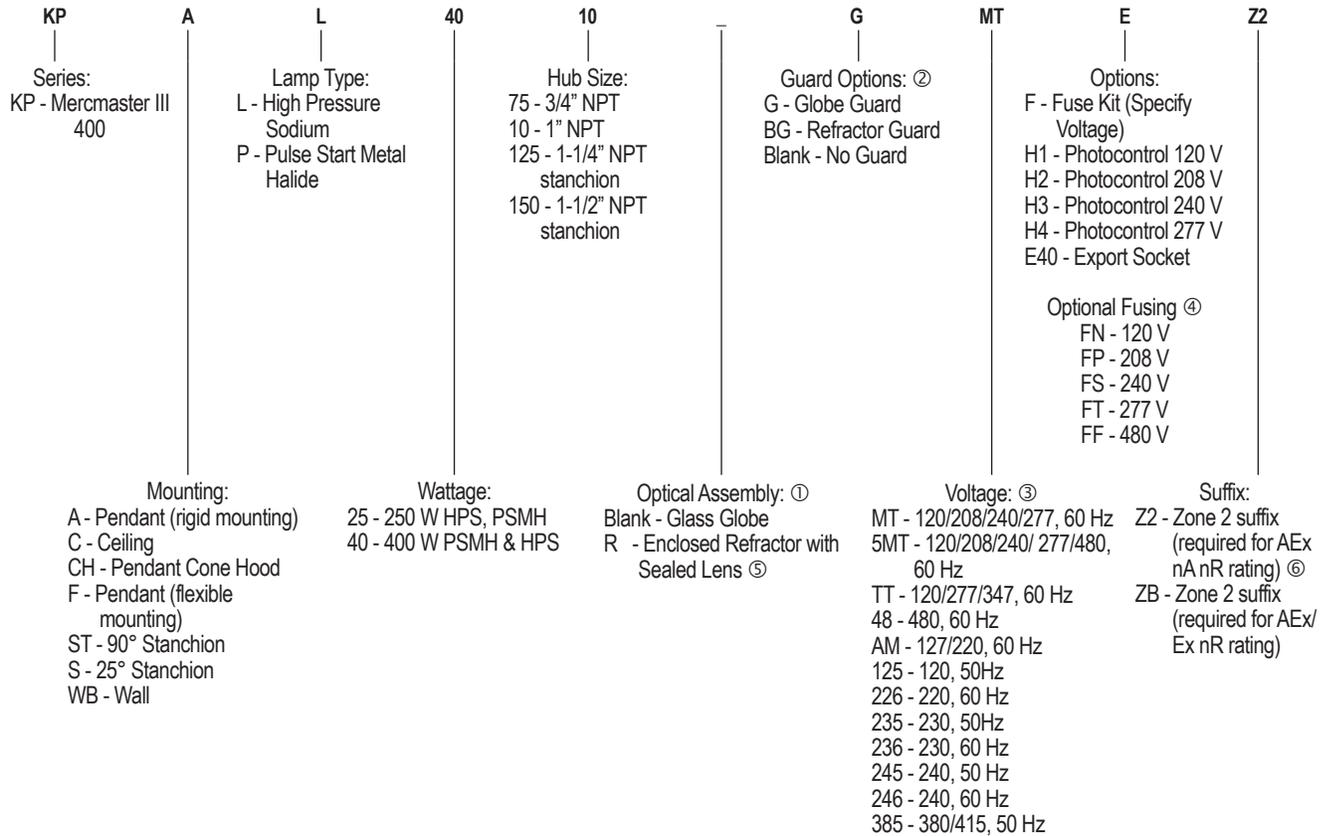
# Mercmaster™ III 400 Luminaires

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### Order Using Catalog Numbering Guide — Mercmaster™ III 50-250 Watt Hazardous Location Luminaires



Lamp Type	Lamp Watts	Voltage Suffixes												
		MT	5MT	TT	48	AM	125	226	235	236	245	246	385	
HPS	250	X	—	—	—	X	X	X	X	X	X	X	X	
HPS	400	X	X	X	—	X	X	—	X	X	—	X	—	
PSMH	250	—	X	X	X	—	X	X	X	—	—	X	—	
PSMH	400	X	X	X	X	—	—	—	X	—	—	X	—	

<b>MT</b> - 120/208/240/277 V, 60 Hz	<b>48</b> - 480 V, 60 Hz	<b>226</b> - 220 V, 60 Hz	<b>245</b> - 240 V, 50 Hz
<b>5MT</b> - 120/208/240/277/480 V, 60 Hz	<b>AM</b> - 127/220 V, 60 Hz	<b>235</b> - 230 V, 50 Hz	<b>246</b> - 240 V, 60 Hz
<b>TT</b> - 120/277/347 V, 60 Hz	<b>125</b> - 120 V, 50 Hz	<b>236</b> - 230 V, 60 Hz	<b>385</b> - 380/415 V, 50 Hz

Refer to "Mounting Hoods and Ballast" page for available Voltage Configuration.

① NO DESIGNATION is required for fixtures with standard type globe.

② NO DESIGNATION is required for fixtures without guards.

③ Other voltages available. Contact your local sales representative.

④ Optional fusing is available for use with MT, 5MT and 48 voltage suffixes ONLY.

⑤ Not certified for use with Class I, Zone 2 rated fixtures.

⑥ The **-Z2** suffix (AEx nA nR) is available for use with MT, 5MT, 48 and 246 voltage suffixes ONLY.

# Mercmaster™ III 400 Luminaires

## High Pressure Sodium and Pulse Start Metal Halide

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HID Luminaires | Area / Task | Hazardous Location | NEC / CEC

#### Electrical Specifications

Lamp Watts	Lamp Type	Frequency	Line Voltage	Starting Amps	Operating Amps	Total Watts
250 Watt	HPS	60	120	2.00	2.50	295
		60	208	1.20	1.50	295
		60	240	1.00	1.30	295
		60	277	0.85	1.10	295
		60	480	0.40	0.65	295
		50	120	1.85	2.75	300
		50	230	0.95	1.44	300
		60	120	3.30	3.80	465
400 Watt	HPS	60	208	1.80	2.20	465
		60	240	1.60	1.90	465
		60	277	1.40	1.70	465
		60	480	0.80	1.00	465
		50	120	3.70	4.00	465
		50	230	1.85	2.00	465
		60	120	2.00	2.30	278
		60	208	1.10	1.40	278
		60	240	1.00	1.20	278
		60	277	0.80	1.00	278
250 Watt	PSMH	60	480	0.30	0.60	278
		60	480	0.45	0.60	285
		50	120	1.90	2.60	288
		50	230	1.00	1.35	288
		60	120	3.10	3.70	447
		60	208	1.70	2.10	447
		60	240	1.50	1.90	447
		60	277	1.30	1.60	447
		60	480	0.80	0.95	446
		50	120	3.17	3.90	454
400 Watt	PSMH	50	230	1.65	2.00	454

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#### Temperature Codes | Class I, Division 2; Class II, Division 1; Simultaneous exposure to hazardous conditions in both classifications

Lamp Watts	Lamp Type	Supply Wire Temp. °C (°F) ①	Ambient Temp. °C (°F) ①	Class I, Division 2			Class II, Division 1 Groups E, F and G			Simultaneous Exposure Class I, Division 2 / Class II, Division 1		
				Globe	Globe & Reflector	Enclosed Reflector	Globe	Globe & Reflector	Enclosed Reflector	Globe	Globe & Reflector	Enclosed Reflector
250	HPS	125 °C (257 °F)	40 °C (104 °F)	T2	T2	T2	T3B	T3B	T4A	325	325	325
		125 °C (257 °F)	55 °C (131 °F)	325	325	T2	—	—	T4A	—	—	325
		125 °C (257 °F)	65 °C (149 °F)	—	—	T2	—	—	T4	—	—	350
400	HPS	90 °C (194 °F)	40 °C (104 °F)	350	T1	350	T3 ②	T3 ②	T3C	T1	T1	350
		90 °C (194 °F)	40 °C (104 °F)	T2A	T2A	T2C	T3 (EF)	T3 (EF)	T4A	—	—	—
250	PSMH	90 °C (194 °F)	55 °C (131 °F)	T2A	T2A	T2C	—	—	—	—	—	—
		90 °C (194 °F)	65 °C (149 °F)	—	—	T2C	—	—	—	—	—	—
		90 °C (194 °F)	40 °C (104 °F)	T2A	T2A	T2B	—	—	T3C	—	—	—

“T” Numbers Represent the Maximum Lamp Temperature for Class I, Division 2 Locations and Maximum Surface Temperature Under Dust Blanket for Class II, Division 1 Locations.

“T” #	T1	350	325	T2	T2A	T2B	T2C	T2D	T3	T3A	T3B	T3C	T4	T4A	T5	T6
Temp. Range °C (°F)	+351 to +450 (+664 to +842)	+326 to +350 (+619 to +662)	+301 to +325 (+574 to +617)	+281 to +300 (+538 to +572)	+261 to +280 (+502 to +536)	+231 to +260 (+448 to +500)	+216 to +230 (+421 to +446)	+201 to +215 (+394 to +419)	+181 to +200 (+358 to +392)	+166 to +180 (+331 to +356)	+161 to +165 (+322 to +329)	+136 to +160 (+277 to +320)	+121 to +135 (+250 to +275)	+101 to +120 (+214 to +248)	+86 to +100 (+187 to +212)	+85 (+185)

#### Temperature Codes | Class I, Zone 2; AEx nA nR IIC (Z2); AEx/Ex nR IIC (ZB); IP66; NEMA 4X

Lamp Watts	Lamp Type	Supply Wire Temp. °C (°F) ①	Ambient Temp. °C (°F) ①	Class 1, Zone 2 AEx nA nR		Class 1, Zone 2 AEx/Ex nR	
				Globe	Globe & Reflector	Globe	Globe & Reflector
250	HPS	110 (230)	40 (104)	T3	T3	T3	T3
	HPS	110 (230)	55 (131)	T3	T3	T3	T3
400	HPS	90 (194)	40 (104)	T3	T3	T3	T3
250	PSMH	90 (194)	40 (104)	T3	T3	T3	T3
	PSMH	90 (194)	55 (131)	T3	T3	T3	T3
400	PSMH	75 (167)	40 (104)	T3	T3	T3	T3

“T” Numbers represent the maximum surface temperature for luminaires with AEx nA nR and AEx nR rating;

“T” number is established by separately determining the maximum temperature of the globe surface and ballast compartment. The hotter of the two is taken to determine the “T” number for the overall fixture.

“T” Number	T1	T2	T3	T4	T5	T6
Temp. Range (°C)	301-450	201-300	136-200	101-135	86-100	85
Temp. Range (°F)	547-842	394-572	277-392	214-275	187-212	185

① Use +90 °C (+194 °F) rated supply wire.

② “T” numbers are for Groups E and F only.

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#### Fuse Kit for Field Installation

Lamp Watts	Volts	Fuse Quantity Required	Catalog Number HPS	Catalog Number PSMH
250	120	1	F7	F10
	208	2	F4	F6
	240	2	F4	F6
	277	1	F3	F5
	480	2	F2	F3
	120	1	F7	—
250	230	2	F4	—
	480	2	—	F2
	230	1	—	F3
400	120	1	F15	F12
	208	2	F8	F6
	240	2	F8	F6
	277	1	F5	F5
	480	2	F5	F3
	120	1	F10	F10
	230	2	F6	F5

#### Catalog Number for Ballast Body and Globe

High Pressure Sodium | Constant Wattage (Min. P.F. 90%)  
Pulse Start Metal Halide | Constant Wattage (Min. P.F. 90%)



Lamp Type	Lamp Watts	Catalog Numbers	Voltage Suffixes											
			MT	5MT	TT	48	AM	125	226	235	236	245	246	385
HPS	250	KPB250L ①	X	—	—	—	X	X	X	X	X	X	X	X
HPS	400	KPB400L ①	X	X	X	—	X	X	—	X	X	—	X	—
PSMH	250	KPB250P ①②	—	X	X	X	—	X	—	X	—	—	X	—
PSMH	400	KPB400P ①	X	X	X	X	—	—	—	X	—	—	X	—

Voltages:

MT - 120/208/240/277 V 60 Hz	48 - 480 V 60 Hz	125 - 120 V 50 Hz	
5MT - 120/208/240/277/480 V 60 Hz	AM - 127/220 V, 60 Hz	226 - 220 V 60 Hz	245 - 240 V 50 Hz
TT - 120/277/347 V, 60 Hz	235 - 230 V 50 Hz	236 - 230 V 60 Hz	385 - 380/415 V, 50 Hz

① Add **-Z2** suffix for factory sealed non-sparking/restricted breathing protection (AEx nA nR). The **-Z2** suffix (AEx nA nR) is available for use with MT, 48 and 246 voltage suffixes ONLY. Add **-ZB** suffix for restricted breathing protection (AEx/Ex nR).

② Not available in MT. See Mercmaster III 50-250 Luminaires.

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Accessories and Replacement Parts		
	Description	Catalog Number
<b>Prismatic Glass Globes — Heat-Resistant</b>		
	Clear	VPGL-4HR
<b>Enclosed Reflector Assembly</b>		
	Heat- and impact-resistant glass lens	KPR-4HB
<b>White Polyester Reflectors — For Globe Fixtures</b>		
	Standard Dome	CMR-4ST ①
	30° Angle	CMR-4AN
	Deep Dome	CMR-4DD ① ②
<b>Standard and Deep Dome</b>	<b>30° Angle</b>	
<b>Guards</b>		
	Globe Guard	KPGU400
	Enclosed Refractor Guard	G-HB7000-NG
<b>Globe Guard</b>	<b>Enclosed Refractor Guard</b>	

① Contact your local sales representative if used with **KPWB** or **KPST** mounting hoods.

② Fixtures when used with Deep Dome Reflectors are NOT UL Listed.

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#### Mounting Hoods

	Hub Size	Weight in kg (lbs)	Catalog Number
<b>Pendant — One Hub, Rigid Mounting</b>			
	3/4" NPT	1.0 (2.3)	KPA-75
	1" NPT		KPA-100
<b>Pendant — Flexible — One Hub, Rigid or Flexible Mounting</b>			
	3/4" NPT	1.1 (2.5)	KPAF-75
	1" NPT		KPAF-100
<b>Pendant Cone — One Hub, Rigid Mounting</b>			
	3/4" NPT	1.1 (2.5)	KPCH-75
	1" NPT		KPCH-100
<b>Ceiling — Five Hubs, Four Close-Up Plugs</b>			
	3/4" NPT	1.4 (3.0)	KPC-75
	1" NPT		KPC-100
<b>Wall — Five Hubs, Four Close-Up Plugs</b>			
	3/4" NPT	1.8 (4.0)	KPWB-75
	1" NPT		KPWB-100
<b>25° Stanchion — One Hub</b>			
	1-1/4" NPT	1.5 (3.3)	KPS-125
	1-1/2" NPT		KPS-150
<b>90° Stanchion — One Hub</b>			
	1-1/4" NPT	1.7 (3.8)	KPST-125
	1-1/2" NPT		KPST-150

#### Luminaire Specifications ①

Watts	Housing Ballast Weight kg (lb)	
	HPS	PSMH
250	11.1 (24.5)	—
400	12.9 (28.5)	12.9 (28.5)

Mounting Hoods	Weight kg (lb)
Pendant	1.0 (2.20)
Pendant Cone	1.1 (2.43)
Ceiling	1.4 (3.09)
Wall	1.8 (3.97)
25° Stanchion	1.5 (3.31)
90° Stanchion	1.7 (3.75)

Refractors, Globes, Guards and Reflectors	Weight kg (lb)
Glass Globe	3.2 (7.0)
Globe Guard	1.4 (3.0)
Enclosed Reflector	5.0 (11.0)
Enclosed Reflector Guard	0.9 (2.0)
Standard Dome	1.1 (2.43)
30° Angle	1.1 (2.43)

① Weights are approximate.

# PCD2 Series Factory Sealed Hazardous Location Photocontrol

For use in Class I, Division 2, Groups A, B, C, D locations

Maintains Class I, Division 2 rating for Mercmaster III – Low Profile, Mercmaster III, and Mercmaster III – 400 Series Luminaires, Mercmaster LED

NEC/CEC: Class I, Division 2, Groups A, B, C, D | NEMA 4X

## Applications

- Encapsulated photocontrol provides automatic dusk-to-dawn lighting control in Class I, Division 2 locations.
- Typical applications include walkways, security areas and any other outdoor lighting application.
- For use with Mercmaster III – Low Profile, Mercmaster III, and Mercmaster III – 400 Series Luminaires.
- For remote mounting in FS Boxes.

- Available for 120, 208, 240, or 277 volts.
- 50-400 W HID, incandescent or fluorescent, 50/60 Hz.
- 1000 V.A. Voltage/Ampere
- Minimum time delay: 15 seconds to eliminate nuisance tripping.
- Provided with (3) 18 AWG stranded leads 152.4 mm (6.00 in) in length.
- Will fit through standard 1/2" knockout.
- Supplied with locknut and gasket.

## Features

- Factory sealed design eliminates the need for an explosionproof enclosure.
- Can be easily installed in the field.
- Solid state design for performance and reliability.

## Materials

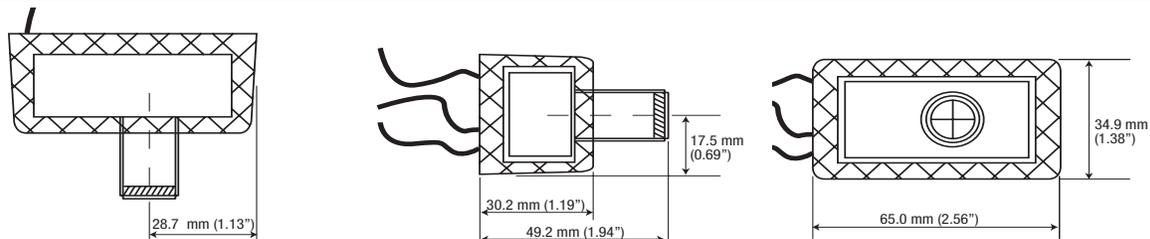
- Encapsulated with epoxy sealing compound
- FS: aluminum

## NEC/CEC Certifications and Compliances

- UL Standard: 1604 – Hazardous (Classified) Locations
- cULus Recognized

	Voltage Range	Max VA	Max Current Amps	Suffix Designation / Catalog Number
<b>Factory-Installed Photocontrol - Not for ceiling or pendant cone.</b>				
<i>Add to fixture catalog after voltage, i.e.: <b>KPWBL1075MTH1</b>.</i>				
 <p>Mercmaster III wall mounting hood with photocontrol installed shown</p>	120 V, 50/60 Hz	1000	—	H1
	208 V, 50/60 Hz	1000	—	H2
	240 V, 50/60 Hz	1000	—	H3
	277 V, 50/60 Hz	1000	—	H4
<b>Photocontrol for Field Installation</b>				
	120 V, 50/60 Hz	1000	8.3 Amp	PC120D2
	208 V, 50/60 Hz	1000	4.8 Amp	PC247D2
	240 V, 50/60 Hz	1000	4.2 Amp	
	277 V, 50/60 Hz	1000	3.6 Amp	
<b>Photocontrol in FS Cover for Use with FS/FD Box</b>				
<i>Photocontrol assembly supplied with two stainless steel screws and one neoprene gasket.</i>				
<i>For additional neoprene gaskets, order catalog numbers <b>FS-GKR-1N</b>.</i>				
	120 V, 50/60 Hz	1000	8.3 Amp	FSKA-PC120D2
	208, 50/60 Hz	1000	4.8 Amp	FSKA-PC247D2
	240 V, 50/60 Hz	1000	4.2 Amp	
	277 V, 50/60 Hz	1000	3.6 Amp	

## Dimensions in Millimeters (Inches)



# Mercmaster™ III 400 Luminaires

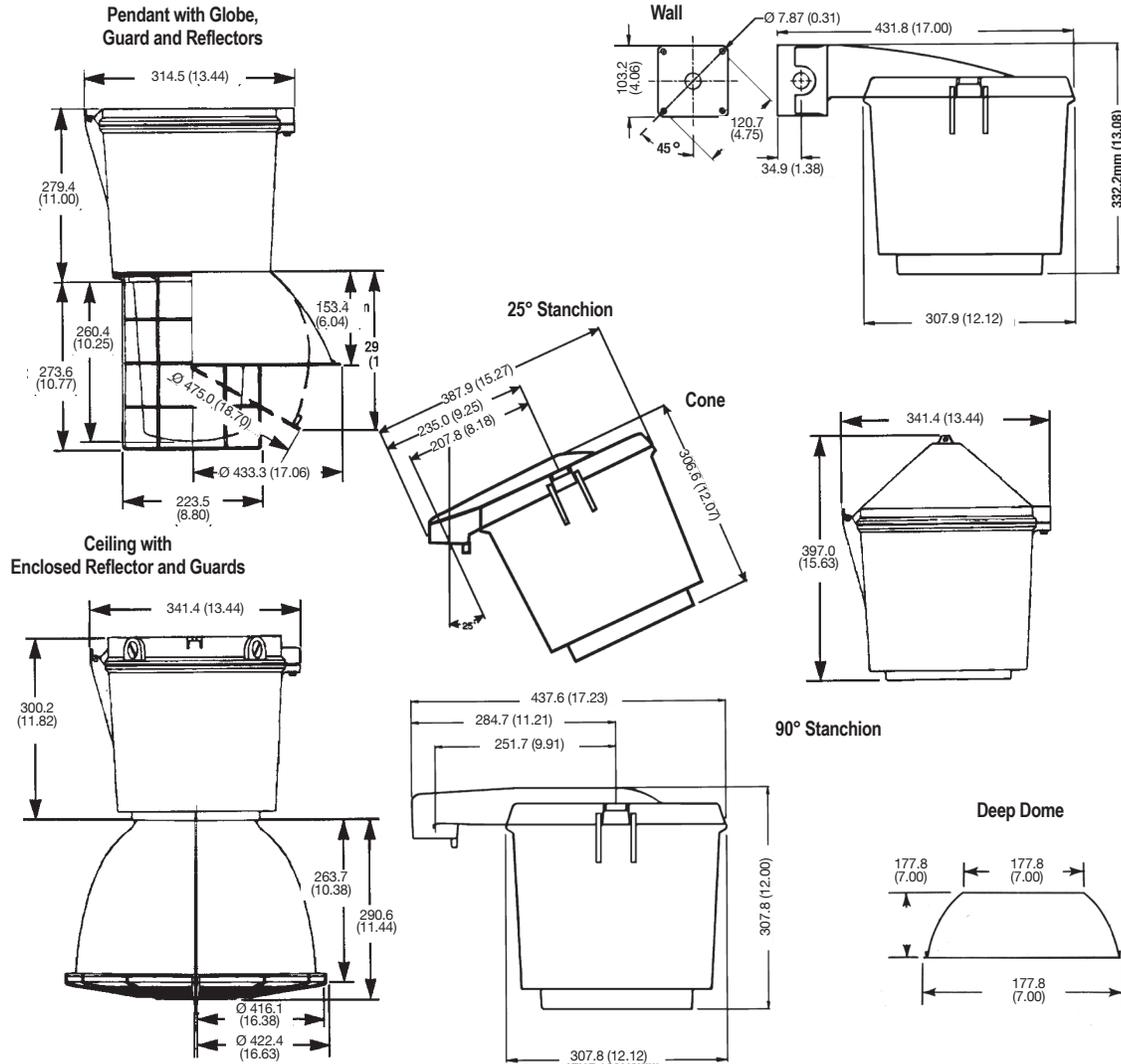
## High Pressure Sodium and Pulse Start Metal Halide

### Enclosed and Gasketed Fixtures — Hazardous Locations

NEC/CEC: Class I, Division 2, Groups A, B, C, D | Class I, Zone 2, AEx nA nR IIC (Z2) | Class I, Zone 2, AEx/Ex nR IIC (ZB) | Class II, Division 1 and 2, Groups E, F, G | Class III | Simultaneous Exposure (Class I, Division 2/ Class II, Division 1) | Fixtures Outside Type (Salt Water) | Type 4X | IP66

HID Luminaires | Area / Task | Hazardous Location | NEC / CEC

#### Dimensions in Millimeters (Inches)



# Mercmaster™ III 400 Luminaires

## High Pressure Sodium and Pulse Start Metal Halide

### Enclosed and Gasketed Fixtures — Hazardous Locations

NEC/CEC: Class I, Division 2, Groups A, B, C, D | Class I, Zone 2, AEx nA nR IIC (Z2) | Class I, Zone 2, AEx/Ex nR IIC (ZB) | Class II, Division 1 and 2, Groups E, F, G | Class III | Simultaneous Exposure (Class I, Division 2/ Class II, Division 1) | Fixtures Outside Type (Salt Water) | Type 4X | IP66

HID Luminaires | Area / Task | Hazardous Location | NEC / CEC

#### Photometric Data

\* Photometric data is based on a fixture with a 400-watt clear Pulse Start Metal Halide lamp (44,000 lumen). For candlepower values of fixtures with other PSMH lamps, use the following multipliers: for a 320 W (33,000 lumen) PSMH lamp – .750; for a 350 W (37,000 lumen) PSMH lamp – .840. For candlepower values of fixture with guard, multiply by – 0.95.

REPORT NUMBER: **KP40PG**

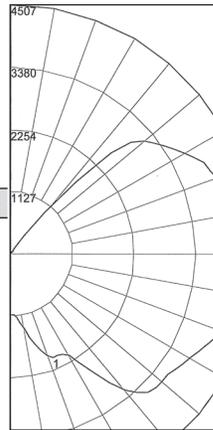
Lamps: 400 W Pulse Start Metal Halide with Globe \*

**TOTAL LUMINAIRE EFFICIENCY = 92.6%**  
CIE TYPE – GENERAL DIFFUSE

Zone	Lumens
0-10	118.85
10-20	488.36
20-30	948.99
30-40	1678.84
40-50	2714.15
50-60	3299.55
60-70	3919.47
70-80	4497.45
80-90	4892.41
90-100	4803.79
100-110	4404.56
110-120	3849.71
120-130	3078.18
130-140	1852.83
140-150	185.86
150-160	14.88
160-170	1.78
170-180	0.12

#### ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixture
0-30	1556.19	3.5	3.8
0-40	3235.03	7.4	7.9
0-60	9248.74	21.0	22.7
0-90	22558.07	51.3	55.4
90-120	13058.07	29.7	32.0
90-130	16136.25	36.7	39.6
90-150	18174.93	41.3	44.6
90-180	18191.71	41.3	44.6
0-180	40749.78	92.6	100.0



#### COEFFICIENTS OF UTILIZATION – ZONAL CAVITY METHOD

##### EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

% Ceiling	Rcc	80				70				50				30				10				0
		70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10				
% Walls	Rw																					
0		100	100	100	100	93	93	93	93	80	80	80	68	68	68	57	57	57	51			
1		86	80	74	69	79	73	68	64	62	58	54	51	48	45	41	39	37	32			
2		76	67	59	52	70	61	54	48	51	45	41	42	37	33	33	30	27	22			
3		68	57	48	41	62	52	44	38	45	37	32	35	30	26	28	24	20	16			
4		62	49	40	33	56	45	37	30	37	31	26	30	25	21	24	20	16	13			
5		56	43	34	27	51	40	31	25	33	26	21	27	21	17	21	17	13	10			
6		51	38	29	23	47	35	27	21	29	23	18	24	18	14	18	14	11	8			
7		47	34	25	20	43	31	24	18	26	20	15	21	16	12	17	12	9	7			
8		44	31	22	17	40	28	21	16	24	17	13	19	14	10	15	11	8	6			
9		41	28	20	15	37	26	18	14	21	15	11	18	13	9	14	10	7	5			
10		38	25	18	13	35	23	16	12	20	14	10	16	11	8	13	9	6	4			

REPORT NUMBER: **KP40PST**

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

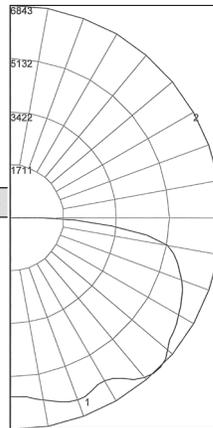
**TOTAL LUMINAIRE EFFICIENCY = 81.4%**  
CIE TYPE – DIRECT

Zone	Lumens
0-10	561.93
10-20	1748.92
20-30	2859.54
30-40	4018.21
40-50	5254.58
50-60	5772.38
60-70	6052.84
70-80	5887.04
80-90	3512.71
90-100	137.17
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

Plane	Spacing Criteria
0-180	1.76
90-270	1.76
Diagonal	1.86

#### ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixture
0-30	5170.39	11.8	14.4
0-40	9188.60	20.9	25.7
0-60	20215.55	45.9	56.5
0-90	35668.14	81.1	99.6
90-120	137.17	0.3	0.4
90-130	137.17	0.3	0.4
90-150	137.17	0.3	0.4
90-180	137.17	0.3	0.4
0-180	35805.32	81.4	100.0



#### COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

##### EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

% Ceiling	Rcc	80				70				50				30				10				0
		70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10				
% Walls	Rw																					
0		97	97	97	97	95	95	95	95	90	90	90	86	86	86	83	83	83	81			
1		84	78	73	68	81	76	71	67	72	69	65	69	66	63	66	63	61	59			
2		74	65	58	51	72	63	57	51	60	54	49	57	52	48	55	51	47	45			
3		66	55	47	40	64	54	46	40	51	44	39	49	43	38	46	42	37	35			
4		60	48	39	32	58	47	39	32	44	37	32	42	36	31	40	35	31	28			
5		55	42	33	27	53	41	33	27	39	32	26	37	31	26	36	30	26	24			
6		50	37	29	23	48	36	28	23	35	28	22	33	27	22	32	26	22	20			
7		46	33	25	20	44	33	25	19	31	24	19	30	24	19	29	23	19	17			
8		43	30	22	17	41	30	22	17	28	22	17	27	21	17	26	21	17	15			
9		40	28	20	15	38	27	20	15	26	19	15	25	19	15	24	19	15	13			
10		37	25	18	13	36	25	18	13	24	18	13	23	17	13	22	17	13	12			

# Mercmaster™ III 400 Luminaires

## High Pressure Sodium and Pulse Start Metal Halide

### Enclosed and Gasketed Fixtures — Hazardous Locations

NEC/CEC: Class I, Division 2, Groups A, B, C, D | Class I, Zone 2, AEx nA nR IIC (Z2) | Class I, Zone 2, AEx/Ex nR IIC (ZB) | Class II, Division 1 and 2, Groups E, F, G | Class III | Simultaneous Exposure (Class I, Division 2/ Class II, Division 1) | Fixtures Outside Type (Salt Water) | Type 4X | IP66

HID Luminaires | Area / Task | Hazardous Location | NEC / CEC

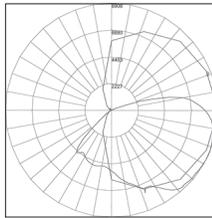
#### Photometric Data

\* Photometric data is based on a fixture with a 400-watt clear Pulse Start Metal Halide lamp (44,000 lumen). For candlepower values of fixtures with other PSMH lamps, use the following multipliers: for a 320 W (33,000 lumen) PSMH lamp – .75; for a 350 W (37,000 lumen) PSMH lamp – .84. For candlepower values of fixture with guard, multiply by – 0.95.

REPORT NUMBER: **KP40PAN**

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

Zone	Lumens	TOTAL LUMINAIRE EFFICIENCY = 76%											
0-10	499.96	<b>CIE TYPE – DIRECT</b>											
10-20	1605.38	<table border="1"> <thead> <tr> <th>Plane</th> <th>Spacing Criteria</th> </tr> </thead> <tbody> <tr> <td>0-180</td> <td>2.28</td> </tr> <tr> <td>90-270</td> <td>1.92</td> </tr> <tr> <td>Diagonal</td> <td>1.84</td> </tr> </tbody> </table>				Plane	Spacing Criteria	0-180	2.28	90-270	1.92	Diagonal	1.84
Plane	Spacing Criteria												
0-180	2.28												
90-270	1.92												
Diagonal	1.84												
20-30	2680.72												
30-40	3841.49												
40-50	4899.23	<b>ZONAL LUMEN SUMMARY</b>											
50-60	4819.21	<b>Zone</b>	<b>Lumens</b>	<b>% Lamp</b>	<b>% Fixture</b>								
60-70	4564.58	0-30	4786.06	10.9	14.3								
70-80	4063.65	0-40	8627.55	19.6	25.8								
80-90	3258.13	0-60	18345.99	41.7	54.9								
90-100	2105.14	0-90	30232.35	68.7	90.4								
100-110	762.24	90-120	3005.49	6.8	9.0								
110-120	138.12	90-130	3083.09	7.0	9.2								
120-130	77.59	90-150	3181.23	7.2	9.5								
130-140	73.07	90-180	3198.89	7.3	9.6								
140-150	25.07	0-180	33431.25	76.0	100.0								
150-160	10.91												
160-170	5.30												
170-180	1.45												



#### COEFFICIENTS OF UTILIZATION – ZONAL CAVITY METHOD

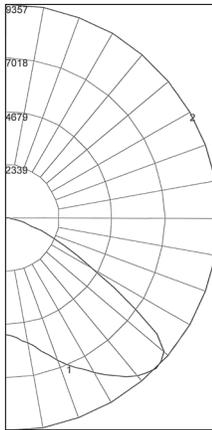
##### EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

% Ceiling	Rcc	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	0			
0		89	89	89	89	86	86	86	86	80	80	80	80	75	75	75	75	71	71	71	71	69			
1		78	72	68	64	75	70	66	62	65	62	59	56	61	58	56	55	57	55	53	50	50			
2		69	61	55	49	66	59	53	48	55	50	46	43	51	47	43	41	48	44	41	39	39			
3		62	52	45	39	59	51	44	38	47	41	37	34	44	39	35	33	41	37	33	31	31			
4		56	46	38	32	54	44	37	31	41	35	30	28	38	33	29	28	36	31	28	26	26			
5		51	40	33	27	49	39	32	26	36	30	25	24	34	29	24	23	32	27	23	21	21			
6		47	36	28	23	45	35	28	22	32	26	22	21	30	25	21	20	29	24	20	18	18			
7		43	32	25	20	42	31	24	19	29	23	19	18	27	22	18	17	26	21	17	16	16			
8		40	29	22	17	39	28	22	17	27	21	16	15	25	20	16	15	24	19	15	14	14			
9		37	26	20	15	36	26	19	15	24	19	15	14	23	18	14	13	22	17	14	12	12			
10		35	24	18	14	34	24	17	13	22	17	13	12	21	16	13	12	20	15	12	11	11			

REPORT NUMBER: **KP40PHB**

Lamps: 400 W Pulse Start Metal Halide with Enclosed Reflector (KPR-4HB) \*

Zone	Lumens	TOTAL LUMINAIRE EFFICIENCY = 64.2%											
0-10	514.26	<b>CIE TYPE – DIRECT</b>											
10-20	1734.49	<table border="1"> <thead> <tr> <th>Plane</th> <th>Spacing Criteria</th> </tr> </thead> <tbody> <tr> <td>0-180</td> <td>2.32</td> </tr> <tr> <td>90-270</td> <td>2.32</td> </tr> <tr> <td>Diagonal</td> <td>2.04</td> </tr> </tbody> </table>				Plane	Spacing Criteria	0-180	2.32	90-270	2.32	Diagonal	2.04
Plane	Spacing Criteria												
0-180	2.32												
90-270	2.32												
Diagonal	2.04												
20-30	3370.99												
30-40	5333.06												
40-50	7165.13	<b>ZONAL LUMEN SUMMARY</b>											
50-60	6195.93	<b>Zone</b>	<b>Lumens</b>	<b>% Lamp</b>	<b>% Fixture</b>								
60-70	2879.28	0-30	5619.74	12.8	19.9								
70-80	921.95	0-40	10952.81	24.9	38.8								
80-90	111.28	0-60	24313.86	55.3	86.1								
90-100	0.14	0-90	28226.37	64.2	100.0								
100-110	0.00	90-120	0.14	0.0	0.0								
110-120	0.00	90-130	0.14	0.0	0.0								
120-130	0.00	90-150	0.14	0.0	0.0								
130-140	0.00	90-180	0.14	0.0	0.0								
140-150	0.00	0-180	28226.50	64.2	100.0								
150-160	0.00												
160-170	0.00												
170-180	0.00												



#### COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

##### EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

% Ceiling	Rcc	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	0			
0		76	76	76	76	75	75	75	75	71	71	71	71	68	68	68	68	65	65	65	64	64			
1		70	67	65	63	69	66	64	62	63	61	60	58	61	59	58	57	59	57	56	55	55			
2		64	59	55	51	62	58	54	50	55	52	49	47	53	51	48	47	51	49	47	46	46			
3		58	51	46	42	56	50	46	42	48	44	41	39	47	43	40	39	45	42	40	38	38			
4		53	45	39	35	51	44	39	35	43	38	34	32	41	37	34	33	40	36	33	32	32			
5		48	40	34	30	47	39	34	29	38	33	29	28	36	32	29	28	35	31	28	27	27			
6		44	35	29	25	43	35	29	25	34	29	25	24	32	28	25	24	31	28	24	23	23			
7		41	32	26	22	39	31	26	22	30	25	22	21	29	25	21	20	28	24	21	20	20			
8		37	29	23	19	36	28	23	19	27	22	19	18	26	22	19	18	26	22	19	17	17			
9		35	26	20	17	34	25	20	17	25	20	17	16	24	20	16	15	23	19	16	15	15			
10		32	24	18	15	32	23	18	15	23	18	15	14	22	18	15	14	21	17	15	13	13			