

# Mercmaster™ III 400 Luminaire for Hazardous and Wet Locations

## High Pressure Sodium and Pulse Start Metal Halide

Listed for simultaneous exposure to combustible dusts and flammable gases or vapors.

*Class I, Division 2, Groups A, B, C, D  
Class I, Zone 2, AEx nA nR IIC (Z2)  
Class I, Zone 2, Ex nR IIC (Z) <sup>1</sup>  
Class I, Zone 2, AEx 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 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; enclosed reflector with sealed lens; or Type V or Type II closed prismatic glass refractor, with or without guards.
- Wide choice of photometric distributions.
- All fixtures designed to perform in a 104 °F/40 °C ambient temperature. Selected fixtures are suitable for ambient temperatures up to 149 °F/65 °C.
- Mogul base porcelain lamp holder with nickel-plated contacts has 392 °F/200 °C 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, CWI and Super CWA).



**Enclosed Reflector      Prismatic Glass Globe      12" Glass Refractor**

- 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).

### 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
- Refractors: prismatic 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**.
- AEx nR fixtures are available with a Class I, Zone 2 rating. Add suffix **-ZB**.
- Ex nR fixtures are available with a Class I, Zone 2 rating. Add suffix **-Z <sup>1</sup>**.
- Quartz Auxiliary comes to full brightness immediately and remains lit until the HID lamp attains 60-70% of full illumination. Quartz Auxiliary supplied with relay switch and socket to accept 120V quartz double-contact bayonet base lamp (not included). (Not suitable for hazardous locations.) Add suffix **-E**.
- Factory sealed photocontrol available. See PCD2 Series.
- Smart Starter incorporates a 1-1/2-minute timer and performs as a conventional starter to normally start lamp. Removes itself from circuit if lamp burns out or is removed from socket. Eliminates starter failures caused by prolonged operation with cycling or failing lamps and simplifies finding their location, reducing maintenance and repair costs. Available for all HPS and PSMH fixtures. Add suffix **-S**.

### Certifications and Compliances

- UL Standard: UL 1598, UL 1598A, UL 844, UL 60079-0, UL 60079-15
- UL Listed: E10444

CSA Certification only.




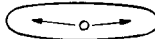



# Mercmaster™ III 400 Luminaire Optics and Accessories

## High Pressure Sodium and Pulse Start Metal Halide - Hazardous and Wet Locations

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Lighting

LIGHTING: ENCLOSED AND GASKETED – AREA – HID

Description		Catalog Number	
Prismatic Glass Globes — Heat-Resistant			
	Clear	VPGL-4HR	
Glass Globe			
Enclosed Reflector Assembly			
	Heat- and impact-resistant glass lens	KPR-4HB	
Enclosed Reflector			
Light Distribution	IES/NEMA Distribution Curves	Catalog Number	
Closed Prismatic Glass Refractors ② — All Heat-Resistant			
	NEMA Type II		KPRF400-2
	NEMA Type V		KPRF400-5
Glass Refractor			
Item	Description	Catalog Number	
White Polyester Reflectors			
	Standard Dome	CMR4-ST ①	
	30° Angle	CMR4-AN	
	Deep Dome	CMR4-DD ①	
Standard and Deep Dome			
30° Angle			
Guards			
	Globe Guard	KPGU400	
	Refractor Guard	KPBG12	
Refractor Guard			

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

② Not suitable for use with Z, Z2 or ZB suffixes (Zone 2).

# Mercmaster™ III 400 Luminaire Photometric Data

## 400 W PSMH

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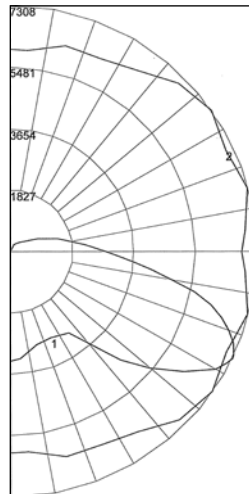
\* Photometric data is based on a fixture with a 400-watt clear Pulse Start Metal Halide lamp (44,000 lumen).

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.

Lighting

LIGHTING: ENCLOSED AND GASKETED – AREA – HID

Zone	Lumens	TOTAL LUMINAIRE EFFICIENCY = 78.4%			
0-10	77.24	CIE Type – Semi-Direct			
10-20	575.14	<div><div>Plane</div><div>Spacing Criteria</div></div>			
20-30	1061.45				
30-40	1581.40	0-180	1.36		
40-50	4468.52	90-270	1.40		
50-60	4938.88	Diagonal	2.42		
60-70	6338.26				
70-80	5875.90	ZONAL LUMEN SUMMARY			
80-90	3886.90	<div>Zone</div>	<div>Lumens</div>	<div>% Lamp</div>	<div>% Fixture</div>
90-100	1318.17	0-30	1713.83	3.9	5.0
100-110	1872.98	0-40	3295.23	7.5	9.6
110-120	1122.17	0-60	12702.64	28.9	36.8
120-130	616.83	0-90	28803.69	65.5	83.5
130-140	358.56	90-120	4313.33	9.8	12.5
140-150	224.03	90-130	4930.15	11.2	14.3
150-160	128.38	90-150	5512.75	12.5	16.0
160-170	50.79	90-180	5699.61	13.0	16.5
170-180	7.69	0-180	34503.3	78.4	100.0



REPORT NUMBER: **KP40PJ5**

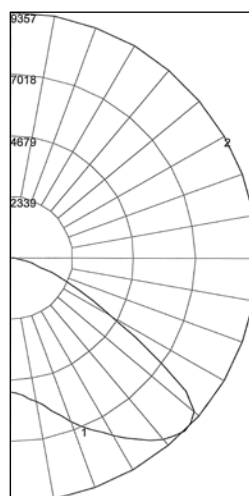
Lamps: 400 W Pulse Start Metal Halide with 8" Prismatic Glass Refractor – NEMA Type V \*

Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

% Floors	Rfc	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	90	90	90	90	87	87	87	87	80	80	80	74	74	74	68	68	68	65						
	1	77	71	66	61	73	68	63	59	62	58	54	57	53	50	52	49	47	44						
	2	67	58	50	44	64	55	48	42	50	44	39	45	41	37	41	37	34	31						
	3	59	48	40	33	56	46	38	32	42	35	30	38	32	27	34	29	25	23						
	4	53	41	33	26	50	39	31	25	35	29	23	32	26	21	29	24	20	17						
	5	48	36	27	21	45	34	26	20	31	24	18	28	22	17	25	20	16	13						
	6	44	31	23	17	41	30	22	16	27	20	15	24	18	14	22	17	13	11						
	7	40	28	20	14	38	26	19	14	24	17	13	22	16	12	19	14	11	9						
	8	37	25	17	12	35	24	17	11	22	15	11	19	14	10	18	13	9	7						
	9	34	22	15	10	32	21	15	10	20	13	9	18	12	8	16	11	8	6						
	10	32	20	14	9	30	20	13	9	18	12	8	16	11	7	15	10	7	5						

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



REPORT NUMBER: **KP40PHB**

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

Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

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