

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.

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

NEC/CEC:

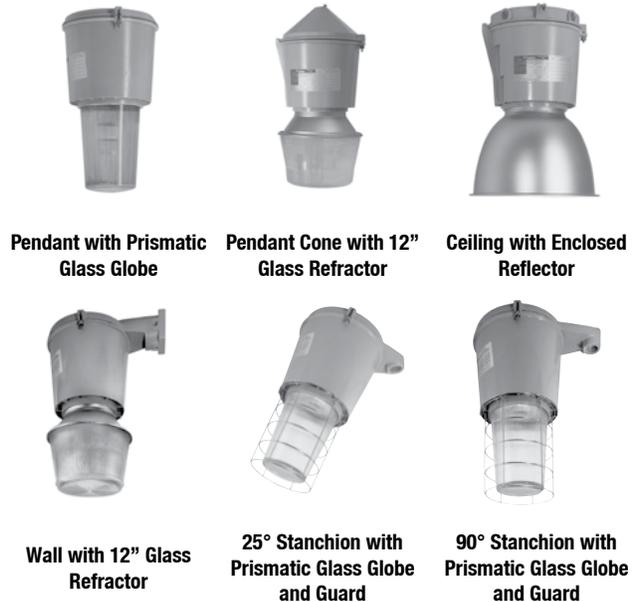
Simultaneous Exposure (Class I, Division 2/
Class II, Division 1)
Fixtures Outside Type (Salt Water)
Type 4X
IP66

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; 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 +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).

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

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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.

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.

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.

Prismatic Glass Globes, Refractors and Enclosed Reflector

Heat-resistant globes, refractors and enclosed reflector thread into ballast housing and seal against a high temperature silicone rubber gasket.



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.



Stainless Steel Latch Assembly

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



Cooler Operating Cone Hood

Larger sloped surface sheds dusts, dirt and combustible fibers providing better heat dissipation.



Fuses

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

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Mercmaster III 400 Family Tree

**Pendant & Flexible
 Pendant Mount ①**



KPA & KPAF

Pendant Cone Mount



KPCH

Ceiling Mount



KPC

Wall Mount ①②



KPWB

25° Stanchion Mount ①



KPS

90° Stanchion Mount ①②



KPST

Ballast Housing

(250, 400 W HPS, 250 – 400 W PSMH)



KPB400

Globe



VPGL-4HR (Heat-Resistant Glass)

Guard (Optional Accessory)



KPGU400

White Polyester Reflector (Optional Accessory)



CMR-4ST (Standard)
 CMR-4DD (Deep Dome)



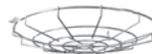
CMR-4AN (30° Angle)

Enclosed Reflector Assembly



KPR-4HB (Glass Lens)

Guard (Optional Accessory)



GHB7000-NG

Closed Prismatic Refractors



KPRF-400 (Heat-Resistant Glass) ③

Guard (Optional Accessory)



KPBG12

APPLETON™

HID/AREA: NEC/CEC ENCLOSED AND GASKETED

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 Available in NEMA Type II and V.

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Description	Catalog Number
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Prismatic Glass Globes — Heat-Resistant



Glass Globe

Clear

VPGL-4HR

Enclosed Reflector Assembly



Enclosed Reflector

Heat- and impact-resistant glass lens

KPR-4HB

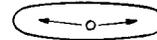
Light Distribution	IES/NEMA Distribution Curves	Catalog Number
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Closed Prismatic Glass Refractors ② — All Heat-Resistant



Glass Refractor

NEMA Type II



KPRF400-2

NEMA Type V



KPRF400-5

Item	Description	Catalog Number
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White Polyester Reflectors



Standard and Deep Dome



30° Angle

For use with globe fixtures

Standard Dome

CMR-4ST①

30° Angle

CMR-4AN

Deep Dome

CMR-4DD①

Guards



Globe Guard



Refractor Guard

Globe Guard

KPGU400

Refractor Guard

KPBG12

Enclosed Refractor Guard

G-HB7000-NG



Enclosed Refractor Guard

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

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

Mercmaster™ III 400 Luminaire for Hazardous and Wet Locations

400 W PSMH

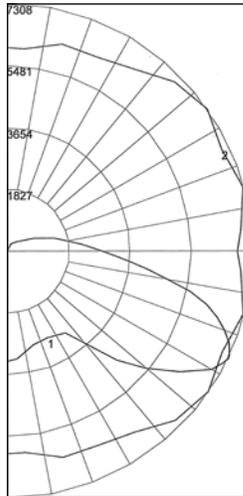
* Photometric data is based on a fixture with a 400-watt clear Pulse Start Metal Halide lamp (44,000 lumen). For candlepower values of fixtures with other PSMH lamps, use the following multipliers: for a 320 W (33,000 lumen) PSMH lamp – .750; for a 350 W (37,000 lumen) PSMH lamp – .840. For candlepower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

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Photometric Data

Zone	Lumens	TOTAL LUMINAIRE EFFICIENCY = 78.4%		
0-10	77.24	CIE Type – Semi-Direct		
10-20	575.14	Plane	Spacing Criteria	
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	Zone	Lumens	% Lamp % Fixture
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**

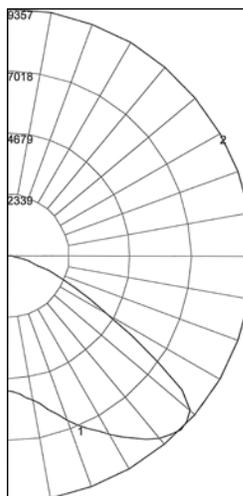
Lamps: 400 W Pulse Start Metal Halide with
 8" Prismatic Glass Refractor – NEMA Type V *

Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

% Floors Rfc	% Ceiling Rcc	% Walls Rw	20															
			80			70			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	Plane	Spacing Criteria	
20-30	3370.99			
30-40	5333.06	0-180	2.32	
40-50	7165.13	90-270	2.32	
50-60	6195.93	Diagonal	2.04	
60-70	2879.28			
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	% Ceiling Rcc	% Walls Rw	20															
			80			70			50			30			10			0
0	76	76	76	76	75	75	75	75	71	71	71	68	68	68	65	65	65	64
1	70	67	65	63	69	66	64	62	63	61	60	61	59	58	59	57	56	55
2	64	59	55	51	62	58	54	50	55	52	49	53	51	48	51	49	47	46
3	58	51	46	42	56	50	46	42	48	44	41	47	43	40	45	42	40	38
4	53	45	39	35	51	44	39	35	43	38	34	41	37	34	40	36	33	32
5	48	40	34	30	47	39	34	29	38	33	29	36	32	29	35	31	28	27
6	44	35	29	25	43	35	29	25	34	29	25	32	28	25	31	28	24	23
7	41	32	26	22	39	31	26	22	30	25	22	29	25	21	28	24	21	20
8	37	29	23	19	36	28	23	19	27	22	19	26	22	19	26	22	19	17
9	35	26	20	17	34	25	20	17	25	20	17	24	20	16	23	19	16	15
10	32	24	18	15	32	23	18	15	23	18	15	22	18	15	21	17	15	13