Mercmaster™ III Low Profile Luminaires

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)
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
  - — Areas of low clearance, low ceiling heights or where fixture weights must be minimized
  - — For Zone 2, the method of protection is AEx nA nR – Restricted Breathing/Nonsparking or AEx nR – Restricted Breathing
  - — 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
  - — Parking garages
  - — Other areas where dust, water, dirt and rough usage are a problem

Features

- Compact light weight low profile design is suited for low mounting heights in conjunction with lower wattage fixtures.
- Modular design allows scores of fixture component combinations to meet installation and lighting needs. Uses same mounting hoods and optical accessories as Mercmaster III.
- A choice of heat-resistant prismatic glass refractors (NEMA I, III or V) or heat-resistant globes which thread directly into ballast housing. Photometrics available upon request – contact your local sales representative.
- Standard dome or 30° angle reflectors made of fiberglass reinforced white polyester. Highly resistant to corrosive atmospheres.
- Accommodates medium base lamps.
- A wide range of voltages available (120 to 600 Volt) and ballast types (Reactor, CWA, CWI and Super CWA).
- Medium base lamp type and watts:
  - — HPS 50 W-150 W
  - — PSMH 50 W-175 W
- 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.
- All Mercmaster III mounting hoods have provision for easy field installation of fuses in fixtures (see fuse kits).
- Fixtures are for use in Class I, Zone 2 hazardous locations.
- The AEx nA nR / Ex nR () factory sealed Mercmaster III prevents vapors and gases from entering the globe chamber. There are no seals or putty required which will reduce installation time and installation errors.

Low Profile Mercmaster III with Prismatic Globe and Guard

Standard Materials

- Mounting hoods, bodies and guard: cast copperfree (4/10 of 1% max.) aluminum
- All hardware and catch assemblies: stainless steel
- Reflectors: Fiberglass reinforced white polyester
- Globes and Refractors: heat-resistant prismatic glass

Standard Finishes

- Mounting hoods, bodies and guards: baked gray epoxy-clad finish, electrostatically applied for complete uniform protection

Options

- 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). Add suffix **-E** †.
- Guards with gray epoxy painted to match fixtures, supplied with stainless steel screws. Add suffix **-G** before voltage suffix.
- Hot Restrike to restrike HPS lamp immediately when power is restored after a momentary power interruption. Add suffix **-R**.
- 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 fixtures. Add suffix **-S.**
- Smart Hot Restrike will immediately restrike HPS lamp when power is restored after a momentary power interruption. The smart function removes the hot restrike ignitor from the circuit if the lamp burns out or is removed from the socket. Eliminates starter failures caused by prolonged operation with cycling or failing lamps. Add suffix **-SR**.
- AEx nA nR fixtures, add suffix **-Z2**.
- AEx nR fixtures, add suffix **-ZB.**
- Ex nR fixtures, add suffix **-Z .**
- Reflectors are available as standard dome and 30° angle polyester. Order separately.

† Fixtures equipped with quartz auxiliary lamp do not comply with NEC/CEC requirements and are not suitable for use in classified locations.
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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

Certifications and Compliances *

- UL Listed: 60079-15
- UL Standard: 1598A, UL 844, Marine Type Electric Fixtures Outside Type (Salt Water)
- CSA Certified: LR25428

Related Products

- Photocells for classified use are available, see *PCD2 Series*.

Order using catalog numbering guide below or select catalog number from tables on following pages.

Catalog Numbering Guide

ML A L 15 2 G1 G MT R Z2

ML — Series:
ML - Mercmaster III Low Profile

A — Mounting:
A - Pendant (rigid mounting)
C - Ceiling
D - Pendant Cone Hood
F - Pendant (flexible mounting)
R - 90° Stanchion
S - 25° Stanchion
W - Wall

L — Lamp Type:
I - Incandescent
L - High Pressure Sodium
H or P - Pulse Start Metal Halide
H - 175 W Metal Halide (available with TT voltage only)

15 — Wattage:
10 - 100 W HPS, PSMH
15 - 150 W HPS, PSMH and 60-150 W max. Incandescent
17 - 175 W PSMH
17 - 175 W MH
50 - 50 W HPS, PSMH
70 - 70 W HPS, PSMH

2 — Hub Size:
2 - 3/4" NPT
3 - 1" NPT
4 - 1-1/4" NPT stanchion
5 - 1-1/2" NPT stanchion

G1 — Optical Assembly: ❷
G1 - Globe
J1 - NEMA I Glass Refractor
J3 - NEMA III Glass Refractor
J5 - NEMA V Glass Refractor
P2 - NEMA II Polymeric Refractor
P3 - NEMA III Polymeric Refractor
P4 - NEMA IV Polymeric Refractor
P5 - NEMA V Polymeric Refractor

G — Guard Options:
G - Cast Guard
N - No Guard

MT — Voltage: ❶
LB - Incandescent, 120, 60 Hz
MT - 120/208/240/277, 60 Hz
5MT - 120/208/240/ 277/480, 60 Hz
48 - 480, 60 Hz
125 - 120, 50 Hz
225 - 225, 50 Hz
226 - 220, 60 Hz
245 - 240, 50 Hz
C2 - 208, 60 Hz, CWI
C3 - 240, 60 Hz, CWI
C6 - 480, 60 Hz, CWI
C7 - 600, 60 Hz, CWI
TT - 120/277/347, 60 Hz, CWA

R — Options:
E - Emergency Quartz ❺
F - Fuse Kit (Specify Voltage) ❻
R - Hot Restrike ❸
S - Smart Starter ❹
SR - Smart Hot Restrike ❸
H1 - Photocontrol 120 V
H2 - Photocontrol 208 V
H3 - Photocontrol 240 V
H4 - Photocontrol 277 V
C - Safety Cable Adapted
D - E-27 Export Socket
T - Terminal Blocks
V - Anti-Vibration Modifications
X - Appledapter ❼ Mounting Hood Adapter
Optional Fusing ❽
FN - 120 V
FP - 208 V
FS - 240 V
FT - 277 V
FF - 480 V

Z2 — Suffix:
Z2 - Zone 2 suffix (required for AEx nA nR rating)
ZB - Zone 2 suffix (required for AEx nR)
Z - Zone 2 suffix (required for Ex nR)

** Compliance data varies for specific fixtures. Consult Appleton regarding suitability of specific fixtures for a particular application.*
❶ Other voltages, frequencies available – contact your local sales representative. Voltages shown are limited to specific combinations; refer to following pages.
❷ Polymeric Refractor suitable for Class II, Groups F and G, NEMA 4X and Marine Type Electric Fixtures Outside Type (Salt Water) only (100 W PSMH Max.). Reflectors ordered separately.
❸ Available for 50-150 W HPS fixtures only.
❹ Available for HPS or PSMH fixtures.
❺ Not suitable for hazardous location per NEC/CEC.
❻ Canadian Electrical Code does NOT allow fusing in hazardous locations.
❼ Appledapter is available for use with the pendant, ceiling and angled stanchion mounting only.
❽ Optional fusing is available for use with MT, 5MT and 48 voltage suffixes ONLY.
CSA Certification Only.

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Mercmaster™ III Low Profile Luminaire Thermal Performance

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

Temperature identification numbers of Mercmaster III Low Profile High Pressure Sodium and Pulse Start Metal Halide

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)
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

Lamp		Supply Wire Min. Temp.	Ambient Temp. (°F/°C)	Class I, Division 2			Class II, Division 1 Groups E, F and G			Simultaneous Exposure Class I, Division 2 / Class II, Division 1		
Watts	Type			Globe	Globe & Reflector	Refractor	Globe	Globe & Reflector	Refractor	Globe	Globe & Reflector	Refractor
50	HPS	194/90	104/40	T3	T3	T3B	T4A	T4A	T5	T3	T3	T3
		194/90	131/55	T3	T3	T3A	T4A	T4A	T4A	T2D	T2D	T2D
		194/90	149/65	T3	T3	T3A	T4	T4	T4A	T2C	T2C	T2C
70	HPS	194/90	104/40	T3	T3	T3	T4	T4	T5	T2B	T2B	T2D
		194/90	131/55	T2D	T2D	T3	T3C	T3C	T4A	T2B	T2B	T2C
		194/90	149/65	—	—	T3	—	—	T4	—	—	T2B
100	HPS	194/90	104/40	T2C	T2C	T2D	T4	T4	T4A	T2B	T2B	T2B
		194/90	131/55	T2B	T2B	T2C	T3C	T3C	T4	T2A	T2A	T2A
		194/90	149/65	—	—	—	—	—	—	—	—	—
150	HPS	194/90	104/40	T2A	T2A	T2B	T3A *	—	T4	325	—	T2
50	PSMH	194/90	104/40	T3	T3	T3A	T4A	T4A	T6	T2D	T2D	T3
		194/90	131/55	T3	T3	T3	T4	T4	T5	T2C	T2C	T2D
		194/90	149/65	T3	T3	T3	T4	T4	T4A	T2B	T2B	T2D
70	PSMH	194/90	104/40	T3	T3	T3	T3C	T3C	T4A	T2B	T2B	T2C
		194/90	131/55	T2D	T2D	T3	T3C	T3C	T4A	T2A	T2A	T2B
		230/110	149/65	—	—	T3	—	—	T4	—	—	T2B
100	PSMH	194/90	104/40	T2A	T2A	T2B	T3B	T3B	T4A	T2	T2	T2A
		194/90	131/55	T2A	T2A	T2B	T3A *	T3A *	T4	T1	T1	T2
150	PSMH	230/105	104/40	350	350	325	—	—	T3B	—	—	T1
175	PSMH	230/105	104/40	350	350	325	—	—	T3B	—	—	T1
175	MH	230/110	104/40	—	—	325	—	—	T3B	—	—	—
60	Inc.	194/90	104/40	T3B	T3B	T3C	—	—	—	—	—	—
		194/90	131/55	T3A	T3A	T3C	—	—	—	—	—	—
		194/90	149/65	T3A	T3A	T3C	—	—	—	—	—	—
100	Inc.	194/90	104/40	T3	T3	T3	—	—	—	—	—	—
		194/90	131/55	T3	T3	T3	—	—	—	—	—	—
		194/90	149/65	T2D	T2D	T3	—	—	—	—	—	—
150	Inc.	194/90	104/40	T2D	T2D	T3	—	—	—	—	—	—
		194/90	131/55	T2B	T2B	T2D	—	—	—	—	—	—
		194/90	149/65	T2B	T2B	T2D	—	—	—	—	—	—

"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 (°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	187-212	185
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

** "T" numbers are for Groups E and F only.*
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Mercmaster™ III Low Profile Luminaire Ballast Bodies

High Pressure Sodium and Pulse Start Metal Halide

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Ballast Bodies

Ballast Body for Glass Refractor

High Pressure Sodium
High Power Factor (Min. P.F. 90%)

Ballast Body for Glass Globe or Polymeric Refractor

Pulse Start Metal Halide
Super Constant Wattage Autotransformer (Min. P.F. 90%)

Lamp Type	Lamp Watts	Catalog Number ❹❺ For Globe	Catalog Number ❹❺ For Refractor	Voltage Suffixes LB	MT	5MT	48	125	225	226	235	245	C2	C3	C6	C7	TT
Inc.	150 Max.	**MLBG15I**	**MLBR15I**	X	—	—	—	—	—	—	—	—	—	—	—	—	—
HPS	50	**MLBG50L ❶❷**	**MLBR50L ❶❷**	—	X	—	—	—	X	X	—	X	—	—	—	—	X
HPS	70	**MLBG70L ❶❷**	**MLBR70L ❶❷**	—	X	—	X	X	X	X	—	X	—	—	—	—	X
HPS	100	**MLBG10L ❶❷**	**MLBR10L ❶❷**	—	X	—	X	X	X	X	—	X	—	—	—	—	X
HPS	150	**MLBG15L ❶❷**	**MLBR15L ❶❷**	—	X	—	X	X	X	X	—	X	X	X	X	X	X
PSMH	50	**MLBG50H ❷❸**	**MLBR50H ❷❸**	—	X	—	X	—	—	—	—	—	—	—	—	—	X
PSMH	70	**MLBG70H ❷❸**	**MLBR70H ❷❸**	—	X	—	X	X	X	—	—	X	—	—	—	—	X
PSMH	100	**MLBG10H ❷❸**	**MLBR10H ❷❸**	—	X	—	X	X	X	—	—	X	—	—	—	—	X
PSMH	150	**MLBG15P ❷❸**	**MLBR15P ❷❸**	—	X	—	X	—	—	—	—	X	—	—	—	—	X
PSMH	175	**MLBG17P ❷❸**	**MLBR17P ❷❸**	—	X	X	X	—	—	—	—	X	—	—	—	—	X
MH	175	**MLBG17H ❷**	**MLBR17H ❷**	—	X	—	—	—	—	—	—	—	X	X	X	X	X

Voltages:
LB - Incandescent, 120 V 60 Hz
MT - 120/208/240/277 V 60 Hz
5MT - 120/208/240/277/480 V 60 Hz
48 - 480 V 60 Hz
125 - 120 V 50 Hz
225 - 225 V 50 Hz
226 - 220 V 60 Hz
235 - 230 V 50 Hz
245 - 240 V 50 Hz
C2 - 208 V 60 Hz, CWI
C3 - 240 V 60 Hz, CWI
C6 - 480 V 60 Hz, CWI
C7 - 600 V 60 Hz, CWI,
TT - 120/277/347 V 60 Hz, CWA

❶ *After voltage suffix add: -**S** for Smart Starter, -**SR** for Smart Hot Restrike, -**R** for ballast body with Hot Restrike Ignitor.*
❷ *Add -**E** after voltage suffix for ballast body with provision for Quartz Emergency Light. Not suitable for hazardous locations.*
❸ *After voltage suffix add: -**S** for Smart Starter.*
❹ *Add **Z2** suffix for factory sealed non-sparking/restricted breathing protection (AEx nA nR). Add **ZB** suffix for restricted breathing protection (AEx nR).*
❺ *Add **Z** for factory sealed restricted breathing protection (Ex nR).*
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Mercmaster™ III Low Profile Luminaire Electrical Specifications and Fuse Kits

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Class I, Zone 2, Ex nR IIC (Z) ⓒ
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

Electrical Specifications

Line Voltage	Type of Ballast ❶	Starting Amps	Operating Amps	Total Watts
50 Watt High Pressure Sodium				
120	HX-HPF	0.58	0.58	64
208	HX-HPF	0.35	0.33	64
240	HX-HPF	0.31	0.29	64
277	HX-HPF	0.25	0.25	64
347 ⓒ	HX-HPF	0.26	0.21	68
70 Watt High Pressure Sodium				
120	HX-HPF	0.90	0.82	94
208	HX-HPF	0.50	0.48	94
240	HX-HPF	0.44	0.41	94
277	HX-HPF	0.35	0.36	94
347 ⓒ	HX-HPF	0.30	0.30	94
480	HX-HPF	0.21	0.21	94
100 Watt High Pressure Sodium				
120	HX-HPF	1.30	1.15	130
208	HX-HPF	0.76	0.67	130
240	HX-HPF	0.66	0.60	130
277	HX-HPF	0.60	0.52	130
347 ⓒ	HX-HPF	0.45	0.39	130
480	HX-HPF	0.33	0.31	135
480	C.W.I.	0.17	0.30	130
600	C.W.I.	0.14	0.24	130
150 Watt High Pressure Sodium ❷				
120	HX-HPF	2.00	1.70	188
208	HX-HPF	1.15	0.95	188
240	HX-HPF	1.00	0.85	188
277	HX-HPF	0.85	0.72	188
347 ⓒ	HX-HPF	0.52	0.56	188
480	HX-HPF	0.50	0.47	189
480	C.W.I.	0.25	0.42	190
600	C.W.I.	0.19	0.35	190
50 Watt Pulse Start Metal Halide				
120	HX-HPF	0.87	0.62	67
208	HX-HPF	0.51	0.40	67
240	HX-HPF	0.47	0.35	67
277	HX-HPF	0.32	0.32	67
347 ⓒ	HX-HPF	0.15	0.20	67
70 Watt Pulse Start Metal Halide				
120	HX-HPF	0.80	0.85	95
208	HX-HPF	0.50	0.52	95
240	HX-HPF	0.43	0.44	95
277	HX-HPF	0.39	0.39	95
347 ⓒ	HX-HPF	0.20	0.28	88
480	HX-HPF	0.26	0.23	95
100 Watt Pulse Start Metal Halide				
120	HX-HPF	1.20	1.15	130
208	HX-HPF	0.70	0.70	130
240	HX-HPF	0.61	0.58	130
277	HX-HPF	0.55	0.50	130
347 ⓒ	HX-HPF	0.40	0.40	129
480	HX-HPF	0.30	0.35	140

Electrical Specifications

Line Voltage	Type of Ballast ❶	Starting Amps	Operating Amps	Total Watts
150 Watt Pulse Start Metal Halide				
120	HX-HPF	1.75	1.60	188
208	HX-HPF	1.30	1.00	188
240	HX-HPF	0.85	0.80	188
277	HX-HPF	0.77	0.70	188
347 ⓒ	Super C.W.A.	0.65	0.55	185
480	Super C.W.A.	0.45	0.42	185
175 Watt Pulse Start Metal Halide				
120	Super C.W.A.	0.90	1.78	199
208	Super C.W.A.	0.50	1.08	199
240	Super C.W.A.	0.35	0.89	199
277	Super C.W.A.	0.30	0.76	199
347 ⓒ	Super C.W.A.	0.25	0.65	208
480	Super C.W.A.	0.25	0.50	213
175 Watt Metal Halide ⓒ				
120	C.W.A.	1.30	1.80	210
208	C.W.A.	0.75	1.04	210
240	C.W.A.	0.65	0.90	210
277	C.W.A.	0.55	0.80	210
347	C.W.A.	0.50	0.65	210
480	C.W.I.	0.20	0.45	215
600	C.W.I.	0.16	0.37	215

Fuse Kit for Field Installation

Lamp Watts	Volts	Fuse Quantity Required	Fuse Kit Catalog Number HPS	Fuse Kit Catalog Number PSMH
50W	120	1	**F5**	**F3**
	208	2	**F3**	**F3**
	240	2	**F3**	**F2**
	277	1	**F2**	**F2**
	347 ⓒ	1	**F1**	**F1**
70W	120	1	**F5**	**F4**
	208	2	**F3**	**F3**
	240	2	**F3**	**F3**
	277	1	**F2**	**F2**
	347 ⓒ	1	**F1**	**F2**
	480	2	**F2**	**F1**
100W	120	1	**F8**	**F6**
	208	2	**F5**	**F4**
	240	2	**F5**	**F3**
	277	1	**F3**	**F3**
	347 ⓒ	1	**F1**	**F2**
	480	2	**F3**	**F2**
150W	120	1	**F10**	**F10**
	208	2	**F5**	**F5**
	240	2	**F5**	**F5**
	277	1	**F5**	**F4**
	347 ⓒ	1	**F2**	**F2**
	480	2	**F3**	**F3**
175W	120	1	—	**F5**
	208	2	—	**F3**
	240	2	—	**F3**
	277	1	—	**F2**
	347 ⓒ	1	**F2**	**F2**
	480	2	—	**F2**

❶ C.W.A. – Constant Wattage Autotransformer. HX-HPF – High Reactance High Power Factor Autotransformer. Super C.W.A. – Super Constant Wattage Autotransformer.
❷ 150 W HPS units equipped with ballasts to operate 55 V lamps only.
ⓒ CSA Certification Only.

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