

MERCMaster LED SERIES



THORNE &  
**DERRICK**  
INTERNATIONAL

Thorne & Derrick

+44 (0) 191 410 4292

[www.heatingandprocess.com](http://www.heatingandprocess.com)

 **Appleton®**



# SEE THE FUTURE.

## THE MERCMASTER LED

PULP & PAPER MILLS

| PROCESSING PLANTS

| CHEMICAL PLANTS

| OIL REFINERIES





## **SOME THINGS DON'T CHANGE.**

Hazardous industrial locations demand lighting fixtures that deliver utmost safety and dependable illumination for critical tasks.

## **BUT SOME THINGS ARE CHANGING RIGHT BEFORE YOUR EYES.**

Hazardous locations are increasingly responsible for energy efficiency and “green” operations to save money and precious resources.

## **THAT'S WHY THIS CHANGE IS HUGE.**

LED lighting has come to hazardous locations, and the Mercmaster LED is setting the industry standard for safety, performance and efficiency. To control the future, you need to see it. The Appleton Mercmaster LED Series of Luminaires.

| STORAGE AREAS

| MANUFACTURING PLANTS

| WASTE & SEWAGE TREATMENT PLANTS

# MERCMaster LED: THE CHOICE FOR A SMART FUTURE.

## WHY IS LED THE FUTURE?

It's not just about efficiency. LED lighting delivers real productivity benefits.

- Resistant to vibrations and shock.
- Directional light can improve efficiency, productivity and safety.
- Cold start capable to -40 °C and instant-on (<100ns).
- Uses no mercury and its beam gives off no heat.
- Promises long life, 60,000+ hours.
- Delivers reduced maintenance costs.

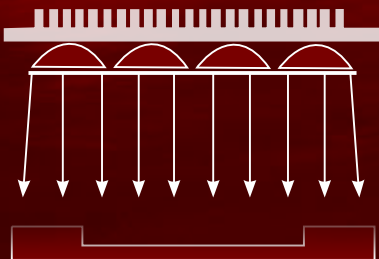
And perhaps most importantly, it's green — offering an energy reduction up to 68% for similar luminosities compared to the PSMH (Pulse Start Metal Halide) you may be using today. Because of its all-around benefits, LED will soon be the prevalent lamp technology in manufacturing settings worldwide. Your future can start now.

## LED vs. HID: THE FUTURE OF EFFICACY.

**BULB:** HID lamps emit light in every direction; this light is controlled using a reflector or refractor. The result is poor utilization efficiencies.



**LED:** LED directs the light to where it's needed without the use of external optics.



No LED industrial fixture surpasses the Appleton Mercmaster LED in efficiency, performance and advanced engineering. In day-to-day use, installation and maintenance, the Appleton Mercmaster LED's superior design simply shines.

In areas requiring better visibility and instant-on illumination, the complete range of Mercmaster LEDs provide a low maintenance, energy efficient solution. Whether low temperatures or retrofit applications Appleton has the answer.

## FEATURES

- 5 LED array choices for light levels equivalent to 70 W HPS/PSMH, 100 W HPS/PSMH, 150 W HPS/PSMH, 175 W PSMH and 250 W HPS/PSMH.
- Luminaires rated for NEC/CEC and ATEX/IECEx environments.
- Upgraded LED array provides higher efficacies.
- 700mA drive current.
- Ambient temperatures:
  - 70W equivalent: -40 °C to 65 °C (-40 °F to 149 °F)
  - 100W to 175W equivalent: -40 °C to 55 °C (-40 °F to 131 °F)
  - 250W equivalent: -40 °C to 50 °C (-40 °F to 122 °F)
- Electrical: 120-277 Vac, 50/60 Hz  
347-480 Vac, 50/60 Hz
- Supplied with terminals to allow for easier wiring.
- Resistant to low temperatures; the lumen output does not decrease.
- Compact lightweight low profile design, well suited for low mounting heights.
- Utilizes the same electrical wiring for HID fixtures with lower electrical ratings.
- Fixture housing and mounting hoods are copperfree cast aluminum for better heat dissipation. All exposed hardware is stainless steel.
- Heatsink designed to keep dust and debris from accumulating on the fixture, while maintaining rounded edges to reduce risk of injury during installation and maintenance.
- High hinge design increases safety during installation and servicing, assuring 360° compression on ballast housing gasket.
- Silicone rubber gasket seals out moisture, dirt and dust; stays flexible and withstands high temperatures.
- High impact-resistant polycarbonate lens is threaded for easy removal.
- Epoxy powder coat finish and stainless steel latch assembly are corrosion resistant.
- Dark Sky Compliant: meets specifications for low glare, focused beam and avoidance of overlighting.
- NEMA Type I and Type 5 light distributions available.

# EASIER INSTALLATION, EASIER MAINTENANCE, EASIER TO BE GREEN – EVERYWHERE.

The Appleton Mercmaster LED excels in a varied range of demanding locations.

## APPLICATIONS

LED fixtures suitable for use in:

- Marine and wet locations.
- A wide range of industrial, chemical processing and other areas where flammable gases and vapors are present.
- Areas of low clearance, low ceiling heights or where fixture weights must be minimized.
- Hazardous locations where severe weather conditions, excessive moisture, dirt, dust, corrosive atmosphere or high ambient temperatures are encountered.

## MOUNTING HOODS

- Six different types of mounting hoods accommodate any application requirement.
- Utilizes the same mounting hoods as the Mercmaster III Series.
- Easily accommodates retrofitting.



Pendant



Wall



Pendant Cone



25° Stanchion



Ceiling



90° Stanchion

## LED TESTING COMPLIANCES

### IES LM-79-08 “Electrical and Photometric Measurements of Solid-State Lighting Products”

An IES approved method describes the procedures to be followed in performing reproducible measurements of the following:

- Total luminous flux (fixture lumens)
- Luminous efficacy (lm/watt)
- Luminous intensity and distribution (candelas)
- Color Characteristics
  - Chromaticity - Quality of color, independent of brightness
  - CCT - Correlated Color Temp (k)
  - CRI - Color Rendering Index

*The Result: Solid-State Lighting Photometric reports (Absolute).*

### LM-80-08 “Measuring Lumen Maintenance of LED Light Sources”

An IES approved method covers the measurement of lumen maintenance and procedures by which LED light sources can be operated.

- Operating for at least 6,000 hours at representative operating temperatures
- Photometric data collected at a minimum of every 1,000 hours
- Chromaticity, color temperature, color rendering

*The Result: Photometric reports for long term lumen maintenance.*

### IES TM-21 – “Projecting Long Term Lumen Maintenance of LED Light Sources”

Provides recommendations for projecting long term lumen maintenance of LED light sources using data obtained per IES LM-80-08.

*The Result: To project lumen degradation or LED's operating life in accordance to LM-80.*



## CERTIFICATIONS AND COMPLIANCES

### NEC/CEC

- Class I, Division 2, Groups A, B, C, D
- Class I, Zone 2, Group IIC
- Class II, Division 1, Group E, F, G
- Class II, Division 2, Group F, G
- Class III
- Type 3R, 4X
- IP66
- Suitable for Use in Wet Locations
- Marine Outside Type (Salt Water)

- UL Standard: UL 1598, UL 1598A, UL 8750, UL 844
- CSA Standard: C22.2 No. 250.0, C22.2 No. 137
- cCSAus

### IEC/ATEX

- Zone 2 and 22
- II 3 GD
- IP66
- Ex Standards: IEC 60079-0; 60079-15; 60079-31

## CATALOG NUMBERING GUIDE

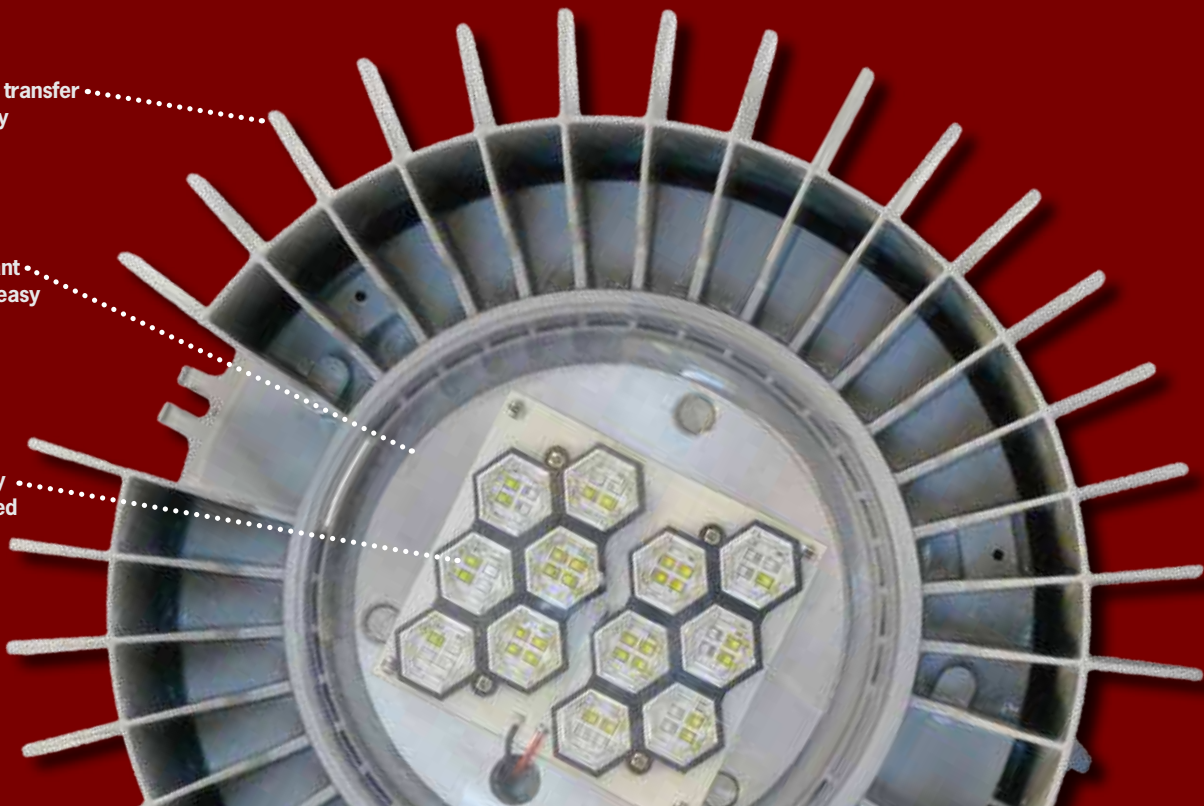
MLEDN	A	17	2	P	5	BU	H1
Mercmaster LED Series: MLEDN - NEC/CEC MLEDNA - ATEX/IECEX	Mounting: A - Pendant C - Ceiling D - Pendant Cone R - 90° Stanchion S - 25° Stanchion W - Wall	Light Level Equivalent: 70 - 70 W HPS 10 - 100 W HPS 15 - 150 W HPS 17 - 175 W PSMH 25 - 250 W HPS/PSMH	Hub Size: 2 - 3/4" NPT 3 - 1" NPT 4 - 1-1/4" NPT stanchion 5 - 1-1/2" NPT stanchion 6 - Metric M20	Optical Assembly: P - Polycarbonate Globe	Light Distribution: 1 - NEMA Type I Elliptical (100 W and 175 W only) 5 - NEMA Type V Symmetrical	Voltage: BU - Universal Voltages 120-277 Vac, 50/60 Hz BH - 347-480 Vac, 50/60 Hz	Options: F - Fusing ①  For NEC/CEC Only: H1 - Photocontrol 120 V H2 - Photocontrol 208 V H3 - Photocontrol 240 V H4 - Photocontrol 277 V D - Diffused Globe

① Canadian Electrical Code does NOT allow fusing in hazardous locations. Fuse not CEC rated.

- Heatsink enables reliable heat transfer via the diecast, aluminum body

- Protective, high impact resistant polycarbonate lens allows for easy maintenance access

- Up to 42 LEDs in internal array direct light to where it is needed without the use of external optics



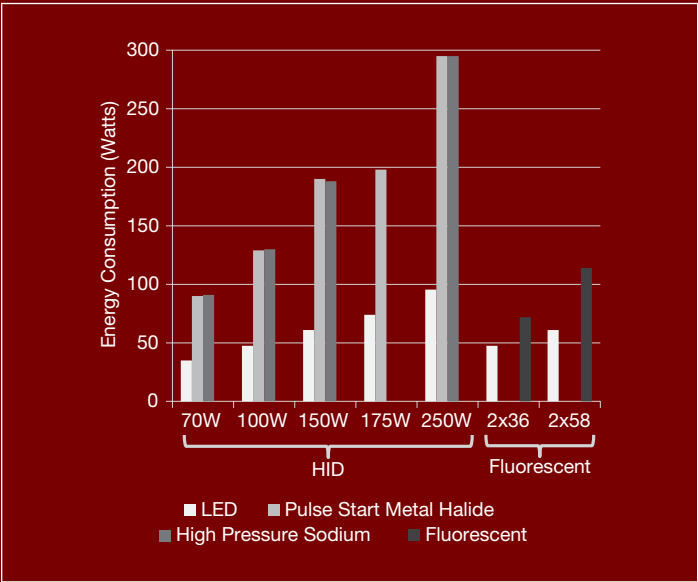
TECHNICAL DATA

	MLEDN70	MLEDN10	MLEDN15	MLEDN17	MLEDN25
Equivalent to HPS/PSMH	70 Watt	100 Watt	150 Watt	175 Watt	250 Watt
Voltage Range	120 - 277 Vac, 50/60 Hz, 347 - 480 Vac, 50/60 Hz				
LED Lumen	2300	3450	4850	6075	9455
Input Power	35 / 33	47.5 / 46	61 / 62	74 / 72	95.5 / 92
Efficacy	66	73	80	82	99
Ambient Temperate / T Rating	-40 °C / T4A 55 °C / T4 65 °C / T3C	-40 °C / T4A 55 °C / T4 65 °C / T3C	-40 °C / T4A 55 °C / T4	-40 °C / T4A 55 °C / T4	-40 °C / T4A 50 °C / T4
CCT/CRI	5650K / 70				
Typical Mounting Height	Maximum 9 ft	8 to 12 ft	12 to 14 ft	Maximum 14 ft	18 to 25 ft
Standard Materials	Housing – Copperfree cast aluminium Finish – Baked gray epoxy powder coat, electrostatically applied Lens – Polycarbonate				
Fixture Weight	19.4 lbs/8.8 kgs				

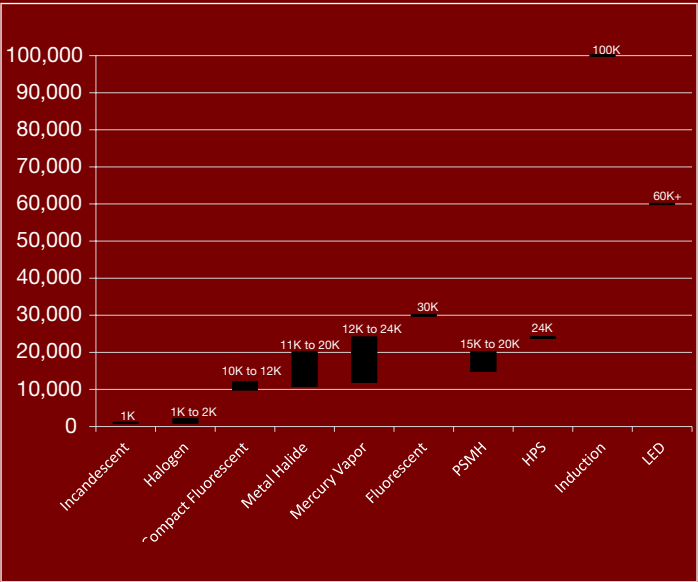
INDUCTION/HID/LED LAMP COMPARISON

	85 W QL	165 W QL	100 W HPS	175 W PSMH	LED (70 W PSMH output)	LED (100 W PSMH output)	LED (150 W PSMH output)	LED (175 W PSMH output)	LED (250 W PSMH output)
System Watts	85	165	130	208	35	47.5	61	74	95.5
CRI	85	80	22	62	70	70	70	70	70
Ignition	0.1 sec	0.1 sec	5 sec	10 sec	Instant	Instant	Instant	Instant	Instant
Warm Up	5 sec	5 sec	3 - 4 min	1.5 min	Instant	Instant	Instant	Instant	Instant
Restrike	0.1 sec	0.1 sec	1 min	1 min	Instant	Instant	Instant	Instant	Instant
Life	100k	100k	24k+	15k	60k+	60k+	60k+	60k+	60k+

ENERGY CONSUMPTION COMPARISON



LIGHT SOURCE LAMP LIFE COMPARISON





Appleton is our premium line of industrial electrical products under EGS Electrical Group, a division of Emerson Industrial Automation.

Emerson Industrial Automation brings integrated manufacturing solutions to diverse industries worldwide. Our comprehensive product line, extensive experience, world-class engineering and global presence enable us to implement solutions that give our customers the competitive edge.

For over 150 years, our electrical product brands have been providing a rich tradition of long-term, practical, high quality solutions with applications ranging from the construction and safe operation of petrochemical and process plants to providing quality power that precisely controls automotive robotic production.

Engineers, distributors, contractors, electricians and site maintenance professionals around the world trust Emerson Industrial Automation brands to make electrical installations safer, more productive and more reliable.

EGS is organized into three focused businesses that provide distributors and end-users expert knowledge and excellent service.

#### Electrical Construction Materials

This group manufactures a broad range of electrical products including conduit and cable fittings, plugs and receptacles, enclosures and controls, conduit bodies, and industrial lighting. Whether the application is hazardous location, industrial, or commercial, the ECM group has the products to meet your needs.

#### Power Quality Solutions

This group offers the broadest power quality line including UPS, power conditioners, voltage regulators, shielded transformers, surge suppression devices and power supplies.

#### Heating Cable Systems

This group offers a broad range of electrical heating cable products for residential, commercial, and industrial applications.

#### Electrical Construction Materials



**OZGEDNEY**



#### Power Quality Solutions

**SOLAHD**

#### Heating Cable Systems

**EASYHEAT**

**NELSON**

EGS Electrical Group  
9377 W. Higgins Road  
Rosemont, IL 60018  
1.800.621.1506  
[www.egseg.com](http://www.egseg.com)

Asia/Pacific  
65.6891.7600

Australia  
61.3.9721.0348

Brazil — São Paulo/SP  
55.11.2122.5777

Brazil — Camaçari/BA  
55.71.3623.2028

Canada  
888.765.2226

China  
86.21.3418.3888

Europe  
33.3.2254.2759

Mexico/Latin America  
52.55.5809.5049

Middle East/Africa/India  
971.4.811.8100