

# LED Lighting Solutions Engineered for Demanding Environments



## Appleton™ LED Luminaires

Reliable LED lighting solutions that deliver superior illumination for safer, more productive environments.



## Whether upgrading a plant's legacy lighting system or designing a new facility, count on our LED lighting solutions.



At Emerson™, we understand that harsh industrial or hazardous environments demand reliable equipment. That is why we are constantly striving to improve your operational performance by protecting you and your equipment, with the latest in today's LED lighting technology. Our Appleton™ LED luminaires are designed to deliver superior illumination with unparalleled protection and operate across your facility without incident.

For proper illumination in extreme conditions, you need a lighting manufacturer who engineers their LED luminaires to ensure optimal light dispersion; creating more usable light. From area to task, flood to emergency, our Appleton™ LED luminaires maximize usable light enabling you to work safely and comfortably.

We also recognize the importance of having LED solutions that are correctly certificated for your geographic location and environment. Whether your geography requires ATEX, IECEx, NEC or CEC certification, our regulatory involvement, technical expertise and range of LED luminaires solve the challenges of outfitting your facilities.

Our engineers continue to deliver unparalleled innovative advancements in LED lighting, making Emerson™ the right choice for harsh industrial or hazardous location luminaires.



Get the most from your LED investment, with lighting quality that makes a difference.

### Rugged Reliability

Through robust engineering and unprecedented innovation, our LED luminaires answer the need for safety and reliability. Learn more. ► [p 3](#)

### High Quality Illumination

Appleton™ LED luminaires are designed to make usable light the foundation for safer, more productive environments. Learn more. ► [p 5](#)

### Luminaire System Life and Total Cost of Ownership

LEDs provide an opportunity to reduce energy consumption and maintenance costs. This translates into real savings for facilities. Learn more. ► [p 7](#)

### Certification Standards

Delivering high quality illumination with superior protection is our top priority, that is why our LED luminaires are engineered to adhere and exceed industry standards. Learn more. ► [p 9](#)

### Methods of Protection and Environmental Ratings

We relentlessly test our fixtures to ensure they meet or exceed their rated capabilities even in the most extreme conditions. Learn more. ► [p 11](#)

### LED Applications and Industries

We offer harsh industrial and hazardous location LED luminaires to meet all your application requirements – without compromise. Learn more. ► [p 13](#)

### Appleton™ LED Luminaires

Consider it solved with our extensive offering of LED luminaires. Learn more. ► [p 15](#)

- A-51™ LED Factory Sealed ► [p 17](#)
- Code • Master™ LED Factory Sealed ► [p 19](#)
- Contender™ LED ► [p 21](#)
- FDLED ► [p 23](#)
- FELED Series Nonmetallic LED ► [p 25](#)
- Mercmaster™ LED Generation 3 ► [p 27](#)
- Mercmaster™ LED Low Profile ► [p 29](#)
- Viamaster™ LED ► [p 31](#)
- Areamaster™ Generation 2 LED ► [p 33](#)
- Baymaster™ LED ► [p 35](#)
- DEMULED LED ► [p 37](#)
- FDBAES LED ► [p 38](#)
- FNES LED ► [p 39](#)
- N2LED ► [p 40](#)

### Lighting Services

Our experts can work with you to provide the optimal lighting solution for your facility. Learn more. ► [p 41](#)

# Rugged Reliability

Emerson™ products are exposed to the toughest environments on earth from the deserts of Saudi Arabia, to off shore platforms, and the North Slope of Alaska. Many of these environments are hazardous, and dependable lighting is essential to keeping workers safe. We understand that reliable lighting is key to improving operational efficiency and reducing expensive maintenance costs. Our commitment to reliability begins with a rigorous process, where we qualify that our designs perform in environments beyond our worst expectations relative to corrosive atmospheres, extreme temperatures, heavy vibration, and electrical disturbances.

## Corrosion Resistance

Emerson™ uses a proprietary finishing technique to protect and seal our Appleton™ LED products. This finish and its' advantages come standard on all our coated products, providing superior protection at no extra cost. Epoxy powder coat products last longer, thus reducing callbacks, lowering total installation and operation costs. All Appleton™ LED luminaires are suitable for use in wet locations and undergo rigorous testing procedures that comply with Marine Outside Type (Salt Water).

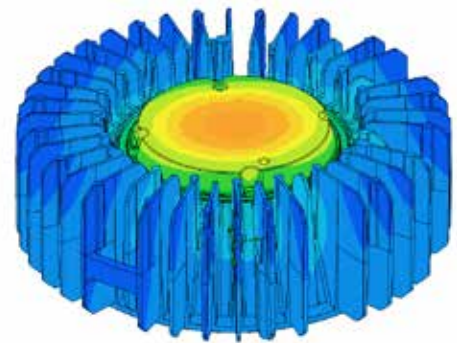


## Reliable Protection

Our Appleton™ LED luminaires are protected with gaskets that keep water and dust on the outside. Critical to reliability, gasket seals are tested to the stringent application requirements encountered in heavy industrial and hazardous applications. Gasket performance testing is conducted according to ASTM-D-395 through ISO accredited third party laboratories. We conduct a number of extended duration product life tests exceeding product operating specifications and verifying long term field reliability. Aging tests include thermal endurance spanning -50°C to +120°C (-58°F to +248°F), humidity levels of 95% RH, and continuous Ultra Violet (UV) exposure. We select top grade gasket material composed of high performance closed cell silicone foam. The superior low compression set characteristics deliver years of reliable service in the toughest environments on the planet.

## Thermal Design

LED reliability begins with good thermal design. Appleton™ LED luminaires emphasize thermal performance first and foremost to provide long term field reliability. Extensive thermal simulation during the design process ensures driver electronics and LED semiconductor devices operate within their thermal limits even at the fixture's maximum rated ambient temperature. No failure prone fans or other active thermal management devices are employed. Our designs optimize housing thermal conduction, maximize radiating surface areas, and employ strategically placed thermal conduction breaks to balance heat flows within each LED fixture (Patent Pending). Appleton™ LED luminaires deliver rated illumination through their full ambient operating temperature range to make sure your facility is safely lit even when the going gets hot.



*Mercmaster™ LED Generation 3  
Thermal Simulation*

# Rugged Reliability

## Shock and Vibration

Our Appleton™ lighting fixtures are designed to be used in areas where high vibration is a constant occurrence. Exterior features, such as captive hardware and integral redundant die cast safety retention points, help protect workers from parts falling into work areas and production processes. Vibration tests involve sweeping through a range of frequencies and resonance points in the x, y and z axis with Gs well beyond expected application levels. To ensure interior components remain protected, impact tests are performed to IEC and NEC/CEC standards after material aging and temperature cycling to verify robust enclosure performance.

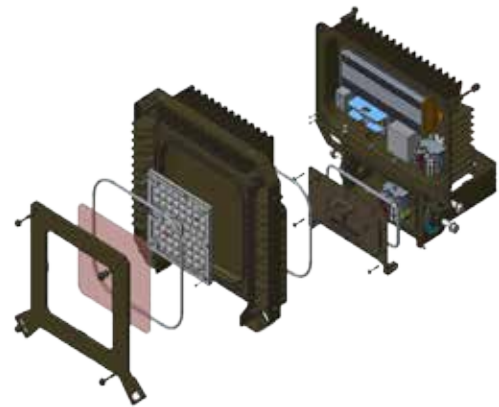
## Superior Surge Suppression



Lightning strikes and electrical devices such as motors and circuit contactors can induce transient surges that pose a threat to LED lighting installations. Appleton™ LED luminaires include a robust 6KV surge suppression circuit to protect against damage caused by surge energy, enhancing reliability, minimizing maintenance and downtime, and extending the life of the lighting installation. We also offer 10KV surge protection on floodlights and high bays for use in high surge risk areas.

## Top Tier Components

Emerson™ knows that world class reliability starts with quality components. Our rigorous supplier selection process accepts only the few that share our passion for long term reliability. Only top tier LEDs make their way into an Appleton™ luminaire. Our LED suppliers perform functional tests that exceed the requirements of LM80 to insure years of stable operation with best-in-class depreciation and color shift. Testing is extended past the 6,000 hour IES requirement to upwards of 15,000 hours to increase confidence in the TM21 prediction of long term performance. Appleton™ LED drivers use the highest quality electronic components and undergo rigorous qualification and production testing.



*Areamaster™ Generation 2 LED  
Assembly Exploded View*

## 100% Inspection Guarantee

Emerson's commitment to quality doesn't stop at product design. One hundred percent of Appleton™ luminaires undergo comprehensive electrical and dielectric testing prior to final inspection. Components and luminaires are bar code traceable to a specific manufacturing lot to allow us to identify and prevent potential product concerns. Our patented optical tester insures light output, color and distribution within specification, and a burn in process identifies infant mortality concerns before a product leaves the factory. Product packaging is tested and certified to International Safe Transit Association (ISTA) standards ensuring that your luminaire will arrive at your facility in the same condition it left ours every time.

# High Quality Illumination

The value in lighting is in enabling you to comfortably and safely work in harsh industrial or hazardous environments. The challenges of bad color, shadows, glare, and inconsistent illumination are complex. Appleton™ luminaires maximize usable light that is comfortable and appropriate for the application: providing a high quality LED experience.

## Our Secondary Optics Help Improve Fixture Spacing

Secondary optics are used to direct light from the source to where it is needed. Unlike HID lamps, LEDs are highly directional, requiring specialized optics to reduce glare and provide even light distribution in a beam shape optimized for specific applications. Well designed optics can help designers achieve ideal spacing and minimize the number of luminaires required. Our secondary optics set the industry standard for comfortable, evenly distributed lighting, with a selection of patterns.



Secondary Optics  
– Task Lighting



Secondary Optics  
– Flood Lighting

## The Right Beam Pattern for Your Application

The Illuminating Engineering Society of North America (IESNA), specifies different types of luminaire light distribution classifications for roadway lighting. Besides roadway lighting, they are also commonly used to describe the distribution of Appleton™ fixtures installed in industrial and hazardous applications for task, area, low bay and high bay lighting applications.

Type 1	Type III	Type V Narrow	Type V Medium	Type V Wide

Flood lights are classified by the National Electrical Manufacturers' Association (NEMA). The NEMA Type specifies how wide or narrow the light is projected out of a flood light. This light distribution is also referred to as beam spread or beam pattern. Typically, the greater the distance between the flood light and the ground or the object being illuminated, the narrower the beam.

NEMA 5x5	NEMA 7x6	NEMA 7x7

# High Quality Illumination

## Color Temperature Options

Correlated Color Temperature (CCT), refers to the color appearance or the look and feel of the light source. The cooler or crisper the appearance of a light source means the higher the CCT measured in Kelvin (K). Many Appleton™ LED luminaires offer more than one color temperature.

- Three color temperatures to suit customer preference
- Preferences shift from blue-rich, 5000K CCTs to warmer values
  - Bluish-White = ↑ K
  - Yellowish-White = ↓ K

5000K: Cool White      4000K: Neutral White      3000K: Warm White



### Guide to Using CCT

Color Temperature	Warm White	Neutral	Cool White
Kelvin	3000K	4000K	5000K
Mood and Effects	Soft, Warm, Pleasing	Neat, Clean, Efficient	Bright, Alert
Typical Applications	Interior, Dark Sky or Wildlife Friendly	Low Mounting Heights, Warehouse	Reading, Highlighting Details, Fog, Dust

## Selecting the Right Lumen Level

Because LED luminaires are more efficient than their HID predecessors, a watt for watt replacement would yield significantly higher than desired light levels. Generally, an LED equivalent luminaire produces the same light with 1/3 to 1/2 the energy consumption of HID. To the right is a guideline of the total LED luminaire output needed to effectively replace an HID luminaire. Since mounting height, luminaire beam pattern, and overall lighting conditions can all affect perceived illuminance levels, it is always best to request a lighting simulation and a luminaire sample. Contact an Appleton™ representative for more information.

HID Equivalent	LED Lumen Range
70 Watt	2000–3000
100 Watt	3000–4000
150 Watt	4000–5000
175 Watt	5500–7000
250 Watt	8000–10000
350 Watt	10000–12000
400 Watt	12000–14000
600 Watt	16000–18000
750 Watt	18000–20000
1000 Watt	24000–26000
1250 Watt	29000–31000
1500 Watt	37000–39000

### A Word About Perceived Brightness

The human eye has two types of photoreceptors: cones, which are active in brighter light levels, and rods, which take over in darker conditions. Commercial photometry measurements are based on photopic luminous efficiency, which only involves the cones. However, recent research shows that a white light source is perceptually and functionally brighter than its High Intensity Discharge (HID) equivalent, especially in a dimly lit application, due to the difference in the spectral power distribution of these light sources. Unfortunately, no universal standard exists today to convert traditional HID measurements to their LED counterparts.

# Luminaire System Life

Appleton™ LED products provide energy efficient and environmentally friendly, functionally equivalent, high quality white light with better visibility, no startup delay, no degradation in lighting quality due to on/off cycles, and no end-of-life cycling. Most people understand that these are benefits to switching to LED lighting. Quantifying these benefits and determining total cost of ownership, however, can be difficult due to the lack of an IES standard defining luminaire life.

## A Word About LED Life Specifications

While standards exist for reporting LED depreciation, no accepted standard exists for luminaire life. Manufacturers use a variety of terms to describe projected LED life. Here are a few of them and their accepted definitions:

### LM-80 Testing Standard

The IES LM-80 standard specifies a testing method for evaluating the useful life of an LED package or array. It requires at least 6,000 hours of actual LED operation, with lumen output measured and reported every 1,000 hours. These results can be used to interpolate the lifetime of an LED source within a system using the in-situ LED source case temperature.

### L70 Reported Lumen Maintenance

L70 is the time it takes for an LED's lumen output to depreciate to 70 percent of its original output. L70 is extrapolated per the calculator provided in IES TM-21, factoring in both application drive current and LED junction temperature. The standard limits reported lifespan to 6 times the number of LM-80 test hours, so that a 10,000 hour test can yield, at most, a 60,000 hour rating.

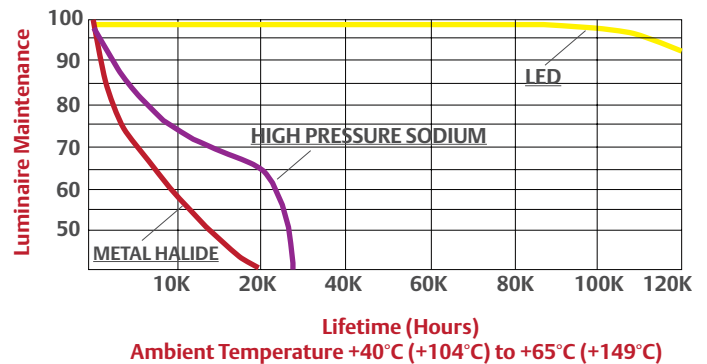
### L70 Calculated Lumen Maintenance

The TM-21 calculator allows manufacturers to calculate an estimated lumen maintenance beyond the 6 times rule. Although this can be useful for evaluating LED performance, lifetime values that exceed the 6 times multiplier are considered high risk.

## True Economic Life

TM-21 assesses lumen maintenance, but not the performance of a complete luminaire system under real world conditions. To determine expected economic life, we evaluate the entire system, including projected LED driver life, power line surge and noise immunity, light engine performance under thermal shock, long term gasket endurance against moisture ingress, and corrosion resistance.

One key factor is operating temperature, which can vary considerably with changing daily and seasonal temperatures. When operating within ambient temperature ratings, the average temperature of the environment over time provides a suitable approximation for predicting luminaire life.



Ambient Temperature	Luminaire Life (Hours)	Number of Years at 24 Hours Usage	Number of Years at 12 Hours Usage
+25°C (+77°F)	200,000	23	46
+40°C (+104°F)	100,000	11	23
+55°C (+131°F)	90,000	10	21
+65°C (+149°F)	50,000	6	11

Note: Example for 400W Equivalent Areamaster™ Generation 2 LED



# Total Cost of Ownership

Although LED luminaires are inarguably more expensive than traditional lighting technologies, the savings in energy and maintenance costs provide a compelling case to upgrade your lighting. Even without taking into account improvements in safety and worker productivity, these easily quantified costs provide adequate justification.

## Dramatically Reduce Your Lighting Costs

Just because your operating budget is low, doesn't mean your expectations have to be. When evaluating lighting systems, consider both the total system power consumption and the expected luminaire life, in order to evaluate energy and maintenance costs and savings.

### Cost of Ownership Comparison

Luminaire	Power Consumption (Watts)	Lumen Output	Yearly Energy Costs	LED / Lamp Life	Annual Maintenance Costs	Yearly Total Costs	Yearly LED Savings	Yearly Savings
<b>Task Lighting Example</b>								
Mercmaster™ LED Low Profile	28	3,300	\$24.53	100,000 hrs	—	\$24.53	\$117.81	83%
Mercmaster™ III Low Profile 70W	94	5,329	\$82.34	24,000 hrs	\$60.00	\$142.34		
<b>Flood Lighting Example</b>								
Areaster™ Generation 2 LED	110	14,200	\$96.36	100,000 hrs	—	\$96.36	\$341.23	78%
Areaster™ 400 W HPS	465	30,900	\$407.34	24,000 hrs	\$30.25	\$437.59		

Energy Costs = Watt x 24 x 365/1000 (Kwh/yr) x \$.10/Kwh  
 Maintenance Costs = (87,600/24,000 x lamp cost + one ballast replacement)/5 years

### Appleton™ Lighting Retrofit Calculator

Calculate maintenance, energy and environmental savings achieved by upgrading to our Appleton™ LED luminaires with this interactive tool. Visit [masteringled.com](http://masteringled.com) to calculate project savings.

#### Maintenance Savings



Metal Halide lamps last an average of 20,000 hours, or 2.28 years, in continuous use. By contrast, LED luminaires are typically rated for 60,000 hours and can exceed 200,000 hours depending on ambient temperature. Longer luminaire life means more time between lamp replacements; resulting in minimal maintenance downtime.

#### Energy Savings



LED luminaires provide far greater lighting efficacy compared to traditional lighting sources. Savings of over 70% can be achieved simply by retrofitting with LED.

#### Safety



LED luminaires provide instant on and cold-start capabilities without end-of-life degradation or premature failures due to frequent cycling; providing a safer work environment particularly in extreme temperatures. The solid state (no moving parts) nature of our luminaires are perfect for high vibration work environments such as oil rigs.

#### Field Replacement Components



By upgrading to an LED solution, maintenance personnel no longer need to change lamps and ballasts. However, we understand that occasionally things go wrong. Production disruptions due to light outages are minimized with our expansive range of replaceable globes and LED drivers.

# NEC/CEC Hazardous Location

Electrical installations in North America are governed by the National Electrical Code (NEC) and Canadian Electrical Code (CEC). The codes were developed for the purpose of life and property protection. Products intended for installation in hazardous locations must be listed or certified for the specific Class, Division or Zone, and Group highlighted below.

## NEC/CEC Area Classification

Classes	Divisions	Groups
<p><b>Class I: Gases</b> Areas in which flammable gases or vapors in the air, in sufficient quantities to ignite or explode.</p> <p><b>Class II: Dust</b> Areas in which combustible dust may be suspended in the air or accumulates on electrical equipment in quantities sufficient to ignite or explode.</p> <p><b>Class III: Fibers</b> Areas in which easily ignitable fibers or flyings are present. Typically fibers and flyings are not suspended in the air, but can collect around machinery or on lighting fixtures.</p>	<p><b>Division 1: Always Present</b> Areas in which ignitable concentrations of hazards exist under normal operation conditions and/or where hazard is caused by frequent maintenance or repair work or frequent equipment failure.</p> <p><b>Division 2:</b> Not Normally Present Areas in which ignitable concentrations of hazards are normally in closed containers or closed systems. Hazards may be present due to accidental rupture or breakdown of such containers or systems.</p>	<p><b>Class I: Gases</b> Group A - Acetylene Group B - Hydrogen Group C - Ethylene Group D - Propane</p> <p><b>Class II: Dusts</b> Group E - Electrically conductive dust Group F - Carbonaceous dust Group G - Agricultural and polymer dust</p>

Examples of NEC/CEC Class I, Division 1 and 2 Situations		
Class I, Division 1	Class I, Division 1 and 2	Non Classified
<b>Example 1</b>		
<p>Conditions:</p> <ul style="list-style-type: none"> <li>① Class I, Division 1 hazard exists during normal operation conditions                             <ul style="list-style-type: none"> <li>• Open air mixing tank</li> <li>• Products stored in work area</li> </ul> </li> <li>② Area classified based on properties of vapors present</li> <li>③ Electrical equipment must use approved Division 1 NEC protection techniques and wiring methods</li> </ul>		
<b>Example 2</b>		
<p>Conditions:</p> <ul style="list-style-type: none"> <li>① Division 2 area can exist where vapors are normally in closed system or containers</li> <li>② Division 1 and 2 areas separated by barrier or space (transition zone)                             <ul style="list-style-type: none"> <li>• Hazardous areas properly documented</li> <li>• Division 2 must use approved NEC wiring methods and products</li> </ul> </li> <li>③ Stored products outside Division 1 work area</li> <li>④ Non hazardous area</li> </ul>		
<b>Example 3</b>		
<p>Conditions:</p> <ul style="list-style-type: none"> <li>① Closed tank and piping confines Division 1</li> <li>② Yellow area qualifies as Division 2</li> <li>③ Stored products not present</li> <li>④ Purged/pressurized control room qualifies as "non hazardous" is sealed off from Division 2 area</li> <li>⑤ Electrical equipment in Division 2 must use approved Division 2 protection techniques and products</li> </ul>		

## Simultaneous Exposure

As specified in UL 844, The exterior surface temperature of a luminaire for use where Class I and Class II conditions may exist simultaneously shall not exceed:

- a. +165°C (+329°F) for Class I and Class II, Group G, Groups F and G, or Groups E, F, and G; or
- b. +200°C (+392°F) for Class I and Class II, Group E, Group F, or Groups E and F

# IECEX Hazardous Location

Other global standards exist, including IECEx. The objective of the IECEx System is to facilitate international trade in equipment and services for use in explosive atmospheres, while maintaining the required level of safety.

## IECEX Zone Classification

IEC publication 60079-10 uses Zones to define the guidelines for classifying hazardous areas.

### Gases

**Zone 0** - Areas where explosive gas atmosphere is continuously present or present for long periods of time.

**Zone 1** - Areas where explosive gas atmosphere is likely to occur in normal operation or can be expected to be present frequently.

**Zone 2** - Areas where explosive gas atmosphere is not likely to occur and if it does, it will only be present for a short period of time.

### Dusts

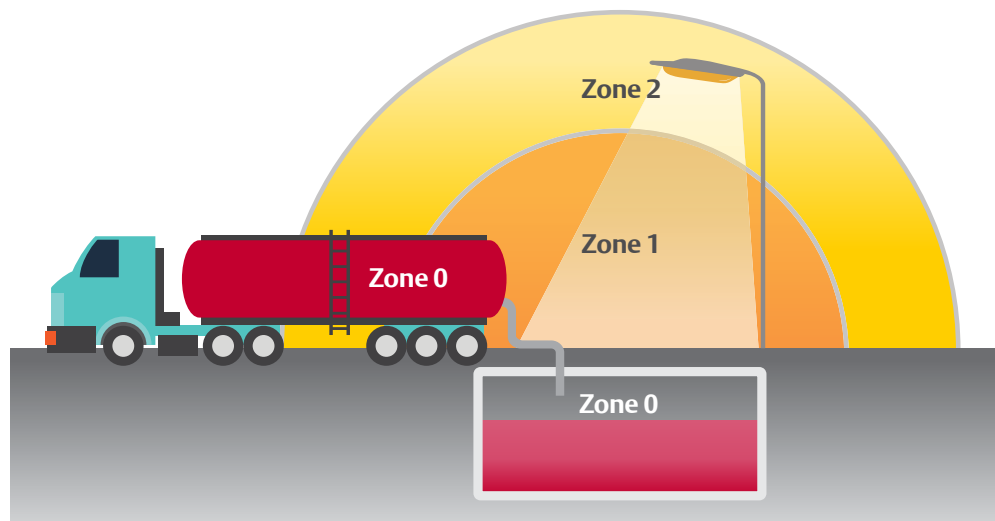
**Zone 20** - Areas in which a combustible dust, as a cloud, is present continuously or frequently during normal operations in sufficient quantities to produce an explosive mixture.

**Zone 21** - Areas in which a combustible dust, as a cloud, is likely to occur during normal operations in sufficient quantities to produce an explosive mixture.

**Zone 22** - Areas in which combustible dust, as a cloud, is not likely to occur, but may occur infrequently and persist for only short periods of time.

## Global Comparison of Hazardous Locations

Comparing IECEx Zone and NEC/CEC Divisions			
Risk	Continuous Danger	Potential Danger	Accidental Danger
IEC	Zone 0 / Zone 20	Zone 1 / Zone 21	Zone 2 / Zone 22
NEC/CEC	Division 1		Division 2



# Methods of Protection

Lighting plays a critical role in the safe, efficient, and productive operation of any industrial facility or production process. In addition to providing light, luminaires for these industries must address and overcome the inherent challenges of hazardous environments. Properly lighting hazardous locations requires knowing the facility environment, combustible composition, and fixture application.

## T - Codes

Every hazardous atmosphere has a temperature that, if exceeded, will cause the flammable or combustible to ignite. Accordingly, this temperature, called the “T” rating, is a critical safety benchmark. Hazardous location luminaires must run cooler than the ignition temperature of the surrounding atmosphere.

Per the “T” code chart, T1 rated luminaires run hot and can only be used in locations where the risk of explosion only exists at temperatures above +450° C (+842° F) to ignite. Conversely, T6 rated luminaires run the coolest and can be used in very volatile environments where temperatures can not exceed +85° C (+185° F).

The “T” code for a fixture is the temperature of the hottest spot on or in the luminaire depending on the luminaires’ Class or Zone rating. Whether the “T” rating is recorded on or in the luminaire depends on whether it is enclosed and gasketed, explosionproof or flameproof.

Maximum Operating Temperatures		Temperature Class (T-Code)
°C	°F	
450	842	— T1
300	572	— T2
280	536	— T2A
260	500	— T2B
230	446	— T2C
215	419	— T2D
200	392	— T3
180	356	— T3A
165	329	— T3B
160	320	— T3C
135	275	— T4
120	248	— T4A
100	212	— T5
85	185	— T6

## Explosionproof and Flameproof

- Class I, Division 1 Explosionproof or Zone 1 Flameproof
- Class II
- An ignition is never allowed into the environment from the luminaire interior
- Engineered flamepaths vent the pressure of an explosion
- Cooled gases are released from the flamepaths at temperatures that will not ignite the surrounding flammable atmospheres
- “T” ratings are measured on the exterior due to the explosionproof and flameproof luminaire’s ability to disarm any explosion caused within the interior of the luminaire



Code • Master™ LED

## Enclosed and Gasketed

- Class I, Division 2
- Class II
- Sealed to prevent the hazardous atmosphere from entering the fixture’s interior
- Prevent dust ingress in agricultural and mineral processing plants
- Contoured surfaces prevent accumulation of dust and reduce blanketing
- Internal components engineered to radiate less heat
- “T” ratings are measured on the inside because if a hazard is accidentally released into the atmosphere and reaches inside the luminaire, it will not ignite assuming the luminaire’s “T” rating is below that of the hazard



Mercmaster™ LED  
Low Profile

# Environmental Ratings

The IEC Ingress Protection classification system designates the degree of protection provided by an enclosure against impact and/or water or dust penetration (ingress). It has two numbers; first - protection against solid objects, second - protection against liquids. The NEMA Standard for Enclosures for Electrical Equipment test for environmental conditions such as corrosion, rust, and icing.

## Ingress Protection (IP) Codes

First Number: Solid Objects	Second Number: Liquids
0 – No protection	0 – No protection
1 – Objects greater than 50 mm (1.97 in)	1 – Vertically dripping
2 – Objects greater than 12.5 mm (0.49 in)	2 – Dripping up to 15°
3 – Objects greater than 2.5 mm (0.10 in)	3 – Limited spraying
4 – Objects greater than 1 mm (0.04 in)	4 – Splashing from all directions
5 – Dust protected	5 – Hosing jets from all directions
6 – Dust proof	6 – Strong hosing jets from all directions
	7 – Temporary immersion
	8 – Continuous immersion

## NEMA Enclosure Types

Type	Fixture Use	IP Code Rating
3R –	Indoor or outdoor use, rain, sleet, external formation of ice	–24
4 –	Indoor or outdoor use, rain, sleet, wind blown dust and rain, splashing water, hose directed water, external formation of ice	–66
4X –	Indoor or outdoor use, rain, sleet, wind blown dust and rain, splashing water, hose directed water, corrosion, external formation of ice	–66

## Suitable for Use in Wet Locations

Defined by the National Electrical Code (NEC) as “Installations underground or in concrete slabs or masonry in direct contact with the earth; in locations subject to saturation with water or other liquids, such as vehicle washing areas; and in unprotected locations exposed to weather.”

## Marine Outside Type (Salt Water)

Most Appleton™ LED lighting products meet the listing requirements of this sub group of UL 1598A, Supplemental Requirements for Luminaires for Installation on Marine Vessels. As a result, our lighting products are suitable for use on off shore platforms and on ships.

### Test requirements include:

- Hose test
  - 25.4 mm (1 in) nozzle, under a pressure of 103 kPa (15 lbs) per square inch from a distance 3.05 m (10 ft) for 5 minutes
- Corrosion test
  - Salt spray (fog) testing for 200 hours



# LED Lighting Applications

Luminaires are commonly categorized according to the type of lighting application, lumen level or mounting height. Choosing the right luminaire based on application is critical for providing safe and comfortable light.



## Task Lighting

Task lighting provides illumination to accomplish a specific task, such as reading a meter or gauge or safely lighting a walkway. Typical mounting heights are 3 meters (10 feet) or less.



## Low Bay or Area Lighting

Low bay or area lighting provides illumination of areas with mounting heights up to 6 meters (20 feet). Typical applications require less than 10,000 lumens, which is closest to a traditional 250 Watt High Intensity Discharge (HID) luminaire.



## High Bay Lighting

High bay is used to describe lighting applications with mounting heights over 6 meters (20 feet). The locations to be lit normally require greater than 10,000 lumens. Typical applications might include; warehouses, wastewater treatment facilities, production or processing plants, storages areas or foundries.



## Flood Lighting

Flood lighting uses a broad light spread to illuminate a wide area or a focused beam to project light over a great distance. Mounting heights are usually 6 meters (20 feet) or higher. Flood lighting provides safe and secure lighting. Common applications include tank farms, loading docks and perimeter fence line lighting.

# LED Lighting Industries

## Hazardous



Refining/Petrochemical



Upstream Oil and Gas



Midstream Oil and Gas



Grain Processing

## Harsh Industrial



Foundry



Wastewater



Pulp and Paper



Warehouse

# Appleton™ LED Luminaires

Each application deserves a tailored lighting solution. Our broad range of reliable and energy efficient LED lighting products deliver superior light distribution and maximize usable light in harsh industrial or hazardous environments.

Lighting Application	LED Lighting Product Series	Certifications													Emergency Battery Backup	Ordinary Location		
		NEC/CEC										ATEX/IECEX						
		Class I				Class II					Class III	ATEX/IECEX						
		Division 1	Division 2	Zone 1	Zone 2	Division 1	Division 2	Zone 20	Zone 21	Zone 22		Zone 1	Zone 2	Zone 21			Zone 22	
Area/Task	A-51™ LED Factory Sealed	●	●			●	●					●						
	Code • Master™ LED Factory Sealed	●	●	●		●	●					●						
	Contender™ LED		●		●	●	●		●	●		●						
	FDLED LED												●	●	●	●	●	
	FELED Series Nonmetallic LED												●	●	●	●	●	
	Mercmaster™ LED Generation 3		●		●	●	●		●			●		●	●	●	●	● <sup>①</sup>
	Mercmaster™ LED Low Profile		●		●	●	●	●				●		●	●	●	●	● <sup>①</sup>
	Viamaster™ LED		●		●		●			●		●		●	●	●	●	● <sup>①</sup>
Flood	Areamaster™ Generation 2 LED		●		●	●	●	●	●	●	●	●	●	●	●	●	●	●
High Bay	Baymaster™ LED		●		●	●	●	●	●	●	●	●	●	●	●	●	●	●
Emergency	DEMULED LED												●	●	●	●	●	●
	FDBAES LED												●	●	●	●	●	●
	FNES LED												●	●	●	●	●	●
	N2LED		●		●													●

① Available in NEC/CEC only.



# Appleton™ LED Luminaires (continued)

Nominal Lumen Outputs													Color Temperature (CCT)			NEMA Light Distribution							
1500 - 2500	2500 - 3500	3500 - 4500	4500 - 5500	7000 - 8000	9000 - 10000	11000 - 12000	13000 - 14000	15000 - 17000	18000 - 20000	22000 - 24000	28000 - 30000	35000 - 38000	5000K	4000K	3000K	Type V	Type V Wide	Type III	Type I	7x6	7x7	5X5	3X3
●	●												●		●	●							
●	●	●	●	●	●	●	●	●	●				●			●							
	●	●	●										●			●							
													●										
	●	●	●	●									●	●		●							
	●	●	●	●	●	●	●	●	●				●	●	●	●	●	●	●				
	●	●	●										●	●	●	●							
●		●		●									●					●					
					●			●	●	●	●	●	●		●				●	●	●	●	●
					●			●	●	●	●	●	●		●	●	●	●					
													●										
													●										
													●										
													●										
													●										
													●										
													●										

# A-51™ LED

## Area/Task Lighting; Explosionproof, Dust-Ignitionproof

The Appleton™ A-51™ LED luminaire is designed to provide the benefits of LED lighting in low mounting height applications previously served by incandescent luminaires. Easy to install in new and retrofit applications, it fits in the same mounting hoods as traditional incandescent Appleton™ A-51™ luminaires with no rewiring. Models are available for Group A and B areas (AAL) as well as strictly Group C and D areas (AL).



AAL  
(Groups A, B, C and D)

AL  
(Groups C and D)

## Features

Easily retrofits into existing A-51™ mounting hoods with no rewiring

Industry leading internal 6KV surge protection to prevent voltage spikes from possibly damaging the driver

Reported L70 life of 60,000 hours; CRI > 80



Gray epoxy powder coat, electrostatically applied paint resists corrosion

Aluminum heat sink and thermally conductive polymer based potting compound maintains low LED driver temperature ensuring long life

Wide operating temperature range from -25°C to +55°C (-13°F to +131°F)



Heavy duty gray epoxy powder coated guards provide protection.



Color globes available (*ALL1 and ALL2 models only*) including: amber, red and green.



Straight and angled porcelain reflectors shape light.



Single sided and three sided Exit signs available.

# A-51™ LED *(continued)*

Area/Task Lighting; Explosionproof, Dust-Ignitionproof

## Product Selection Key

Certifications															Emergency Battery Backup	Ordinary Location
NEC/CEC										ATEX/IECEX						
Class I					Class II					Class III	Zone 1	Zone 2	Zone 21	Zone 22		
Division 1	Division 2	Zone 1	Zone 2	Division 1	Division 2	Zone 20	Zone 21	Zone 22								
•	•			•	•				•							

## Mounting Hoods for A-51™ LED



Ceiling Mount  
(AL Models and AAL Models)



Pendant Mount  
(AL Models and AAL Models)



15° Short Bracket  
(AL Models and AAL Models)



Long Bracket  
(AL Models Only)



25° Stanchion  
(AL Models Only)

## NEC/CEC Certifications

### All Models

- Suitable for Use in Wet Locations
- cULus: E10444

### Group A and B areas (AAL Models)

- Class I, Division 1, Groups A, B, C, D
- Class II, Division, Groups F, G
- Class III

### Group C and D areas (AL Models)

- Class I, Division 1, Groups C, D
- Class II, Division 1, Groups E, F, G
- Class III

## Specifications

Features	Specifications
<b>Voltage:</b>	120-277 Vac, 50/60 Hz; 100-300 Vdc
<b>Retrofit Equivalents:</b>	100W – 300W Incandescent
<b>Lumens:</b>	1,600 to 3,200
<b>Efficacy:</b>	Up to 134 lm/w
<b>Color Temperatures:</b>	3000K, 5000K
<b>CRI:</b>	80+
<b>Ambient Temperature:</b>	-25°C to +55°C (-13°F to +131°F)
<b>LED Lumen Depreciation (L70):</b>	60,000+ hours
<b>Replaceable Components:</b>	Globe (AL Models) Globe Assembly (AAL Models)

### A-51™ LED: UL Listed and CSA Certified for Class I, Division 1, Group A Locations

Acetylene is a dangerous gas because of its highly flammable nature. Even a little spark can ignite it so it is given an odor for easy detection, otherwise it is odorless in its pure form. Acetylene has a very wide range of flammability. The lower flammable limit (LFL) is typically listed as 2.5% and the upper flammable limit (UFL) is listed as 81%. Although acetylene will not undergo combustion at concentrations above the UFL, it can undergo an explosive decomposition reaction, even at concentrations of 100%.

# Code•Master™ LED

## Area/Task Lighting; Explosionproof, Dust-Ignitionproof

The Appleton™ Code•Master™ LED luminaire is certified for Class I, Division 1 locations and offers a full range of lumen outputs and mounting options. Easy to install in new and retrofit applications, it fits in the same mounting hoods as our legacy Code•Master™ luminaires with no rewiring. Easy to maintain, it offers field replaceable components and 60,000+ hours of operation with minimal maintenance. It is available in a full range of models equivalent to HID lamps from 70 to 400 Watts. The low profile design and optional diffused glass globe ensure adequate clearance and minimal glare in low ceiling applications, while the highest lumen output models provide ample lighting at mounting heights of 25 feet or higher.



## Features

Easily retrofits into existing Code•Master™ mounting hoods with no rewiring

NEMA 4X cast copperfree aluminum body with baked epoxy powder coat finish

Superior thermal heat sink design. Cool operation from -40°C to +65°C (-40°F to +149°F)

Choice of clear glass lens or diffused lens to reduce glare in low ceiling applications

Optional lens guard to protect against breakage



Double lead Acme threads for quick installation with only half as many turns and no sticking or galling.



Driver can be quickly and easily accessed for replacement with optional fuse to protect circuits against power spikes.



Clean, industrial design with no dirt traps for ease of maintenance.



Multiple mounting options, including: pendant, ceiling, wall bracket and 25° stanchion.

# Code•Master™ LED *(continued)*

Area/Task Lighting; Explosionproof, Dust-Ignitionproof

## Product Selection Key

Certifications															Emergency Battery Backup	Ordinary Location
NEC/CEC										ATEX/IECEX						
Class I				Class II					Class III	ATEX/IECEX						
Division 1	Division 2	Zone 1	Zone 2	Division 1	Division 2	Zone 20	Zone 21	Zone 22		Zone 1	Zone 2	Zone 21	Zone 22			
•	•	•		•	•				•							

## NEC/CEC Certifications

- Class I, Division 1 and 2, Groups B, C, D ①
- Class I, Zone 1, Group IIB + H<sub>2</sub>
- Class II, Division 1, Group E, F, G
- Class II, Division 2, Group F, G
- Class III
- Simultaneous Exposure
- Type 3R, 4X
- IP66/67
- Suitable for Use in Wet Locations
- Marine Outside Type (Salt Water) ①
- cCSAus: 164460, Certificate Number: 70030675

① Use of a fuse voids Marine Outside Type (Salt Water) rating.

## Specifications

Features	Specifications
<b>Voltage:</b>	120-277 Vac, 50/60 Hz; 125-300 Vdc 347-480 Vac, 50/60 Hz
<b>Retrofit Equivalents:</b>	70W – 750W HID
<b>Lumens:</b>	2,600 to 19,000
<b>Efficacy:</b>	Up to 111 lm/w
<b>Color Temperatures:</b>	5000K
<b>CRI:</b>	70+
<b>Ambient Temperature:</b>	-40°C to +65°C (-40°F to +149°F)
<b>LED Lumen Depreciation (L70):</b>	100,000+ hours
<b>Replaceable Components:</b>	Driver, Globe Assembly

# Contender™ LED

## Area/Task Lighting; Enclosed and Gasketed

Appleton™ Contender™ LED luminaires deliver exceptional efficiency, performance and advanced engineering. The compact, light weight, low profile design is suited for low mounting heights. With four different field replaceable globe options (clear and diffused polycarbonate, clear glass, or prismatic glass refractor) it can be customized to application requirements. With three light output levels, offering illumination up to 175W HID equivalent, the Contender™ LED Luminaire is designed to directly retrofit (no adapter) to Crouse-Hinds™ Champ® VMV Series mounting hoods. Additionally, this series is certified with many of the Mercmaster™ LED Low Profile globes and accessories including the visor, angled reflector, globe guards, and safety cable.



## Features

IP67 certified luminaire that includes an IP66 Driver with 6KV Surge Protection



Gray epoxy powder coat, electrostatically applied paint resists corrosion

LEDs have been tested for over 18,000 hours and have a rated L70 of 100,000+ hours with a calculated L70 of much longer

High temperature silicon gaskets resist compression set and maintain seal



IP68 Cord Gland Sealed wiring inlet to prevent water ingress into fixture from conduit



Directly mounts to Crouse-Hinds™ Champ® mounting hoods (no adapter).



Globe assembly can be quickly removed to replace the globe for modification of light output of the fixture. Reduces storage requirements by minimizing SKUs and swapping/storing globes as necessary by application.



Safety cable is slipped around the housing through casted retention points.

# Contender™ LED (continued)

## Area/Task Lighting; Enclosed and Gasketed

### Product Selection Key

Certifications														Emergency Battery Backup	Ordinary Location	
NEC/CEC										ATEX/IECEX						
Class I				Class II						Class III	Zone 1	Zone 2	Zone 21			Zone 22
Division 1	Division 2	Zone 1	Zone 2	Division 1	Division 2	Zone 20	Zone 21	Zone 22								
	•		•	•	•		•	•	•							

### Interchangeable with Crouse-Hinds™ Champ® Mounting Hoods

Crouse-Hinds™ Luminaires that mount to Champ® Mounting Hoods	Pendant	Flexible Pendant	Ceiling	Wall	Quad	25 Degree Stanchion	Straight Stanchion
	APM2, APM3	HPM2	CM2, CM3	TWM2, TWM3	QM25	JM5	PM5
VMV Series - HID and LED	•	•	•	•	•	•	•
DMV Series - HID and Fluorescent	•	•	•	•	•	•	•
PVM Series - HID and LED	•	•	•	•	•	•	•
LMV Series - HID	•	•	•	•	•	•	•

### NEC/CEC Certifications

- Class I, Division 2, Group A, B, C, D
- Class I, Zone 2, Group IIC
- Class II, Division 1, Group E, F, G
- Zone 21 and 22, Group IIIC
- Class II, Division 2 Group F, G
- Class III
- Suitable for Use in Wet Locations
- Marine Outside Type (Salt Water) For USA ONLY
- Type 3R, 4 and 4X
- IP66/67
- Simultaneous Exposure
- American Bureau of Shipping (ABS) Certified
- cCSAus: 164460, Certificate Number: 70170001

### Specifications

Features	Specifications
<b>Voltage:</b>	120-277 Vac, 50/60 Hz; 125-300 Vdc 347-480 Vac, 50/60 Hz
<b>Retrofit Equivalents:</b>	70W – 175W HID
<b>Lumens:</b>	3,000 to 5,500
<b>Efficacy:</b>	Up to 125 lm/w
<b>Color Temperatures:</b>	5000K
<b>CRI:</b>	70+
<b>Ambient Temperature:</b>	-40°C to +65°C (-40°F to +149°F)
<b>LED Lumen Depreciation (L70):</b>	100,000+ hours
<b>Replaceable Components:</b>	Driver, Globes

# ATX™ FDLED LED

## Area/Task Lighting; Flameproof

Appleton™ ATX™ FDLED Series LED luminaires provide standard and emergency lighting in hazardous areas designated as Zone 1, 2, 21 and 22. These units are entirely self-contained in a flameproof enclosure, with borosilicate glass for increased protection in high-corrosion environments. A thermal heating cable is included on the low temperature model for reliable performance in -60°C (-76°F) ambient environments



## Features



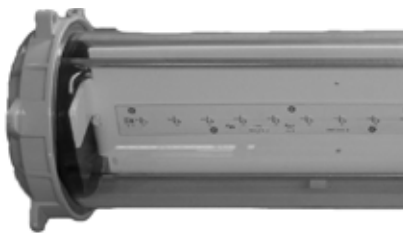
4725 lm  
(IIB)



2400 lm  
(IIB+H<sub>2</sub>)



400 lm  
(IIC)



Impact resistant borosilicate glass sealed tube



High impact resistance: 4J on glass and 7J on metal parts



Aluminum end caps and cover feature gray, anti-corrosion finish



# ATX™ FDLED LED (continued)

## Area/Task Lighting; Flameproof

### Product Selection Key

Certifications														Emergency Battery Backup	Ordinary Location
NEC/CEC										ATEX/IECEX					
Class I				Class II					Class III	Zone 1	Zone 2	Zone 21	Zone 22		
Division 1	Division 2	Zone 1	Zone 2	Division 1	Division 2	Zone 20	Zone 21	Zone 22							
										●	●	●	●	●	

### ATEX/IECEX Certifications

- Certification Type FDLED
  - Gas: Zone 1 and 2:
    - Conforming to ATEX 94/9/CE: Ⓜ II 2 G
    - Type of Protection: Ex d IIB (4725 lm version), Ex d IIB+H<sub>2</sub> (2400 lm version), Ex d IIC (400 lm version)
    - Temperature Class: T6
  - Dust: Zone 21 and 22:
    - Conforming to ATEX 94/9/CE: Ⓜ II 2 D
    - Type of Protection: Ex tb IIIC
    - Surface Temperature:
      - +75°C (+167°F) (400 lm version)
      - +80°C (+176°F) (2400 and 4725 lm version)
- Ambient Temperature: -30°C to +60°C (-22°F to +140°F)
- CE Declaration of Conformity: 50312
- ATEX Certificate: INERIS 15 ATEX 0042X
- IECEX Certificate: IECEX INE 15.0046X
- Index of Protection according EN/IEC 60529: IP66/68
- Impact Resistance (shock): IK09 (400 and 2400 lm version), IK08 (4725 lm version)
- Internal Volume: > 2 dm<sup>3</sup> (122 in<sup>3</sup>) - 2 liters

### Specifications

Features	Specifications
<b>Voltage:</b>	120-277 Vac, 170-300 VDC; 347-480 Vac; 50/60 Hz
<b>Retrofit Equivalents:</b>	175W-1500W HID
<b>Lumens:</b>	9,500 – 38,000
<b>Efficacy:</b>	Up to 140 lm/w
<b>Color Temperatures:</b>	5000K, 3000K
<b>CRI:</b>	70+, 80+
<b>Ambient Temperature:</b>	-40°C to +65°C (-40°F to +149°F)
<b>LED Lumen Depreciation (L70):</b>	100,000+ hours
<b>Replaceable Components:</b>	LED Driver, Lens Cover

# FELED Series Nonmetallic LED

## Area/Task Lighting; Enclosed and Gasketed

Appleton™ ATX™ FELED Series Nonmetallic LED luminaires are easy to install, easy to maintain non-metallic linear fixtures. The FELED is ideal for use in Zone 1 and Zone 21 locations and provides 2,000 to 8,000 lumens to fit a wide variety of applications. Also available in a 3 hour emergency version, the FELED includes a built-in monthly self- test. Test results are displayed through multi-colored LED. They are easy to retrofit in same mounting footprint as Appleton's FE series nonmetallic fluorescent luminaires; saving time, labor and money.



## Features



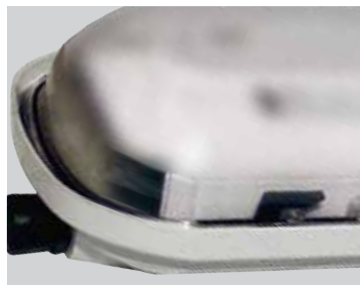
Fiberglass reinforced polyester body – lightweight, corrosion resistant and impact resistant (IK10, the highest rating)

Field replaceable LED driver and lens

Contemporary, low profile design suitable for use in tight spaces and high wind zones



Central hex key opening with unique patented release system to prevent damage.



Latch assembly and elastomer gasket seals against water and dust ingress (IP66).



Hinged polycarbonate lens for easy maintenance.

# FELED Series Nonmetallic LED *(continued)*

## Area/Task Lighting; Enclosed and Gasketed

### Product Selection Key

Certifications														Emergency Battery Backup	Ordinary Location
NEC/CEC										ATEX/IECEX					
Class I				Class II					Class III	ATEX/IECEX					
Division 1	Division 2	Zone 1	Zone 2	Division 1	Division 2	Zone 20	Zone 21	Zone 22		Zone 1	Zone 2	Zone 21	Zone 22		
										•	•	•	•	•	

### ATEX/IECEX Certifications

- Certification Type: FELED
  - Gas: Zones 1 and 2
    - Conforming to ATEX 2014/34/EU: Ⓢ II 2 G
    - Type of Protection: Ex db eb mb IIC Gb
    - Temperature Class: T6 to T5
  - Dust: Zones 21 and 22
    - Conforming to ATEX 2014/34/EU: Ⓢ II 2 D
    - Type of Protection: Ex tb IIIC Db
    - Surface Temperature: +63°C to +85°C (+145°F to +185°F)
- Ambient Temperature: -30°C up to +55°C (-22°F up to 122°F/ +131°F) (standard) and -20°C up to +50°C (-4°F up to 122°F) (emergency)
- EU Declaration of Conformity: 50317
- ATEX Certificate: LCIE 16 ATEX 3048X
- IECEX Certificate: IECEX LCIE 16.0038X
- Index of Protection according EN/IEC 60529: IP66
- Impact Resistance (shock): IK10
- Photobiological Safety, IEC 62778 and IEC 62471: RGO

### Specifications

Features	Specifications
<b>Voltage:</b>	100-240 Vac, 50/60 Hz
<b>Retrofit Equivalents:</b>	1x18 W to 3x58 W Fluorescent
<b>Lumens:</b>	2,500 – 7,500
<b>Efficacy:</b>	Up to 122 lm/w
<b>Color Temperatures:</b>	5000K, 4000K
<b>CRI:</b>	70+, 80+
<b>Ambient Temperature:</b>	-30°C to +55°C (-22°F to +131°F)
<b>LED Lumen Depreciation (L70):</b>	60,000+ hours
<b>Replaceable Components:</b>	LED Driver, Diffuser, Lens

# Mercmaster™ LED Generation 3

## Area/Task Lighting; Enclosed and Gasketed

The Appleton™ Mercmaster™ LED Generation 3 is a full-feature lighting solution with in a rugged and corrosion-resistant housing. They are designed to meet the most demanding task and area lighting requirements. Featuring seven lumen outputs, seven mounting types, four light distribution patterns, four replaceable globe choices, three color temperatures, two input voltages, and various retrofit adapter options, this best-in-class LED achieves unprecedented application versatility and comfort.

The Mercmaster™ LED Generation 3 is rated for Class I, Division 2 and Class II hazardous locations and is certified for ATEX/IECEX Zone 2 and 21 - 22. The Industrial Mercmaster™ LED Generation 3 is cULus Certified for ordinary (unclassified) locations.



MLGL3 - MLGL7 /  
IMLGL3 - IMLGL7  
3,500 to 7,500 Lumens



MLGH9 - MLGH6 /  
IMLGH9 - IMLGH6  
9,500 to 17,500 Lumens

## Features

Superior thermal heat sink design provides cool operation from  $-40^{\circ}\text{C}$  to  $+65^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$  to  $+149^{\circ}\text{F}$ ) – wide enough for any environment

IP66/67, NEMA 4X for marine and wet locations



Replaceable globes and LED drivers extend luminaire life even beyond 100,000 hours

Heavy guard provides extra protection

**MLGL3 - MLGL7 / IMLGL3 - IMLGL7**  
2m - 6m (6ft - 20ft) Mounting Heights

6KV standard surge protection – protects your investment and keeps you up and running



Secondary optics for Type I, Type III, Type V and Type V Wide light distribution

Up to 135 lumens per watt for maximum energy savings

Optional diffused polycarbonate globe for increased glare control

**MLGH9 - MLGH6 / IMLGH9 - IMLGH6**  
4.5m - 10.75m (15ft - 35ft) Mounting Heights



Captive, stainless steel latch assembly (bolt and nut) closes securely while providing resistance to corrosive atmospheres.



Swing-away design simplifies wiring and installation. Extra-high hinge secures housing to hood during wiring.



Safety cable is slipped around the housing through casted retention points.



Interchangeable globes and guards for application versatility (some certification restrictions).

# Mercmaster™ LED Generation 3 (continued)

## Area/Task Lighting; Enclosed and Gasketed

### Product Selection Key

	Certifications														Emergency Battery Backup	Ordinary Location	
	NEC/CEC										ATEX/IECEX						
	Class I				Class II						Class III	ATEX/IECEX					
	Division 1	Division 2	Zone 1	Zone 2	Division 1	Division 2	Zone 20	Zone 21	Zone 22	Zone 1		Zone 2	Zone 21	Zone 22			
MLG		•		•	•	•		•		•		•	•	•	• <sup>①</sup>		
MGZ											•	•	•	•			
IMLG															• <sup>①</sup>	•	

① Available in NEC/CEC only.

### NEC/CEC Certifications

#### Ordinary Location (All Models)

- Type 3R, 4, 4X
- IP66/IP67
- Suitable for Use in Wet Locations
- Marine Outside Type (Salt Water)
- cCSAus: 164460, Certificate Number: 70129364

#### Hazardous Location (MLG and MLGH Models)

- Class I, Division 2, Groups A, B, C, D
- Class II, Division 1 and 2, Group E, F, G
- Class III
- Class I, Zone 2 AEx ec IIC
- Zone 21 AEx tb IIIC
- Class I, Zone 2 Ex ec IIC
- Zone 21 Ex tb IIIC
- Type 3R, 4, 4X
- IP66/IP67
- Simultaneous Exposure
- Suitable for Use in Wet Locations
- Marine Outside Type (Salt Water)
- cCSAus: 164460, Certificate Number: 70112879

### ATEX/IECEX Certifications

#### Hazardous Location (MLG and MLGH Models)

- Certification Type: Mercmaster Generation 3
- Gas: Zones 2
    - Conforming to ATEX 2014/34/EU: Ⓢ II 3 G
    - Type of Protection: Ex ec IIC T\* Gc
    - Temperature Class: T6 to T3

### Specifications

Features	Specifications
<b>Voltage:</b>	120-277 Vac, 50/60 Hz; 125-300 Vdc 347-480 Vac, 50/60 Hz
<b>Retrofit Equivalents:</b>	70W – 600W HID
<b>Lumens:</b>	2,600 to 19,000
<b>Efficacy:</b>	Up to 160 lm/w
<b>Color Temperatures:</b>	5000K/4000K/3000K
<b>CRI:</b>	70+ / 70+ / 80+
<b>Ambient Temperature:</b>	-40°C to +65°C (-40°F to +149°F) [-20°C to +55°C (-4°F to +131°F) for Emergency version]
<b>LED Lumen Depreciation (L70):</b>	100,000+ hours
<b>Replaceable Components:</b>	Driver, Globe, Battery Pack

- Dust: Zones 21 and 22
  - Conforming to ATEX 2014/34/EU: II 2 D
  - Type of Protection: Ex op is tb IIIC T\*\*°C Db  
Ex tc IIIC T\*\*°C Dc
  - Surface Temperature: +61°C to +95°C  
(+142°F to +203°F)
- Ambient Temperature: -40°C up to +65°C (-40°F up to 149°F)
- ATEX Certificate: Sira 17ATEX9365X
- IECEx Certificate: IECEx SIR 17.0085X
- Index of Protection according EN/IEC 60529: IP66
- Impact Resistance (shock): IK08
- Photobiological Safety, IEC 62778 and IEC 62471

# Mercmaster™ LED Low Profile

## Area/Task Lighting; Enclosed and Gasketed

Appleton™ Mercmaster™ LED Low Profile luminaires provide a broad, evenly distributed light pattern that can be tailored in the field. Choose the right lighting levels for any low-mount application while eliminating spotlight effects and dark spots. They offer a choice of globes and an optional 30° reflector to achieve the optimum light distribution for any application. This is the one harsh and hazardous location luminaire you can specify to meet all your low-mount application requirements, without compromise.

Mercmaster™ LED Low Profile Luminaires are certified for Class I, Division 2, Class II, and Class III hazardous locations, rated for use in marine and wet locations, and are globally certified for ATEX/IECEX Zone 2, 21 and 22. The Industrial Mercmaster™ LED Low Profile is cCSAus Certified for ordinary (unclassified) locations.



IMLLED/MLLED

## Features



Captive, stainless steel latch assembly (bolt and nut) closes securely while providing resistance to corrosive atmospheres.



Easy to wire terminal housing. IP66/67 Driver with 6KV Surge Protection. Optional fuse for extra protection.



Safety cable is slipped around the housing through casted retention points.



Optional watertight pendant hood available for installation in water prone conduit systems.

# Mercmaster™ LED Low Profile *(continued)*

## Area/Task Lighting; Enclosed and Gasketed

### Product Selection Key

	Certifications														Emergency Battery Backup	Ordinary Location	
	NEC/CEC										ATEX/IECEX						
	Class I				Class II						Class III	ATEX/IECEX					
	Division 1	Division 2	Zone 1	Zone 2	Division 1	Division 2	Zone 20	Zone 21	Zone 22	Zone 1		Zone 2	Zone 21	Zone 22			
MLLED		●		●	●	●	●				●		●	●	●	● <sup>Ⓞ</sup>	
IMLLED																● <sup>Ⓞ</sup>	●

Ⓞ Available in NEC/CEC only.

### NEC/CEC Certifications

#### Ordinary Location (All Models)

- Suitable for Use in Wet Locations
- Marine Outside Type (Salt Water) For USA ONLY
- Type 3R, 4 and 4X
- IP66/IP67
- cCSAus: 164460, Certificate Number: 70134063

#### Hazardous Location (MLLED Models)

- Class I, Zone 2, AEx ec IIC
- Class II, Division 1, Group E, F, G
- Zone 20, Group IIIC
- Zone 21, AEx tb IIIC
- Class II, Division 2, Group F, G
- Class III
- Simultaneous Exposure

### ATEX/IECEX Certifications

#### Hazardous Location (MLLED Models)

- Certification Type: Mercmaster Low Profile
  - Gas: Zones 2
    - Conforming to ATEX 2014/34/EU: Ⓢ II 3 G
    - Type of Protection: Ex ec IIC T\* Gc
    - Temperature Class: T5 to T4
  - Dust: Zones 21 and 22
    - Conforming to ATEX 2014/34/EU: II 2 D
    - Type of Protection: Ex op is tb IIIC T\*\*°C Db
    - Ex tc IIIC T\*\*°C Dc
    - Surface Temperature: +66°C to +88°C (+151°F to +190°F)

### Specifications

Features	Specifications
<b>Voltage:</b>	120-277 Vac, 50/60 Hz; 125-300 Vdc 347-480 Vac, 50/60 Hz
<b>Retrofit Equivalents:</b>	70W – 175W HID
<b>Lumens:</b>	2,800 to 5,500
<b>Efficacy:</b>	Up to 125 lm/w
<b>Color Temperatures:</b>	3000K, 4000K, 5000K
<b>CRI:</b>	70+
<b>Ambient Temperature:</b>	-40°C to +65°C (-40°F to +149°F) [-20°C to +55°C (-4°F to +131°F) for Emergency version]
<b>LED Lumen Depreciation (L70):</b>	100,000+ hours
<b>Replaceable Components:</b>	Driver, Globe, Battery Pack, Battery Management Module

- Ambient Temperature: -40°C up to +65°C (-40°F up to 149°F)
- ATEX Certificate: Sira 17ATEX9365X
- IECEx Certificate: IECEx SIR 17.0085X
- Index of Protection according EN/IEC 60529: IP66
- Impact Resistance (shock): IK08
- Photobiological Safety, IEC 62778 and IEC 62471

# Viamaster™ LED

## Area/Task Lighting; Enclosed and Gasketed

The Appleton™ Viamaster™ LED features a contemporary, low profile design that is suitable for tight spaces. It is lightweight for easy handling and is designed to simplify installation and maintenance. A terminal block with ample wiring room provides quick and secure electrical connections. Its industry leading thermal management ensures safe, reliable operation over a wide temperature range. Field replaceable components can be accessed by swinging away the hinged cover, secured with captive screws. Viamaster™ LED is available in a full range of lumen outputs, with light distribution equivalent to fluorescent luminaires.

The Viamaster™ LED Luminaire is ideal for use in NEC and CEC Governed harsh and hazardous locations. The ATX™ Viamaster LED is ideal for use in ATEX and IECEx Governed hazardous locations.



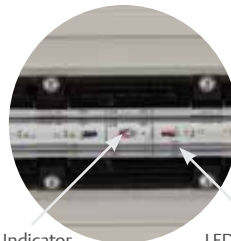
**LLED/ LLEDA**  
(2,200 to 7,800 lumens)



Hinged design with captive screws for safe, easy access to replace components, including driver and polycarbonate lens.



Fits tight spaces and low ceiling. Same footprint as Appleton™ FV, FE and FN fluorescent luminaires.



LED Indicator

LED Array

Emergency version available. Up to 1,250 lumens of illumination for 90 minutes. Functional diagnostic test self-initiates every 14 days.



Dual terminal blocks, and multiple entries standard for easy through wiring.



# Viamaster™ LED *(continued)*

## Area/Task Lighting; Enclosed and Gasketed

### Product Selection Key

	Certifications														Emergency Battery Backup	Ordinary Location	
	NEC/CEC										ATEX/IECEx						
	Class I				Class II						Class III	ATEX/IECEx					
	Division 1	Division 2	Zone 1	Zone 2	Division 1	Division 2	Zone 20	Zone 21	Zone 22	Zone 1		Zone 2	Zone 21	Zone 22			
LLED		•		•		•			•	•					•*		
LLEDA												•	•	•			

\*Available in NEC/CEC only.

### NEC/CEC Certifications

#### (NEC/CEC models only)

- Class I, Division 2, Groups A, B, C, D
- Class I, Zone 2, Group IIC
- Class II, Division 2, Groups F, G
- Zone 22, Group IIIB
- Class III
- Type 3R, 4, 4X
- Marine Outside Type- For USA Only ⌘
- IP66/67
- Suitable for Use in Wet Locations
- cCSAus: 164460, Certificate Number: 70013699

⌘ Fusing option not available with Marine Outside Type (Salt Water) rating. Fusing option not permitted for cUL.

### ATEX/IECEx Certifications

#### (ATX™ models only)

- Certification Type: LLEDA
  - Gas: Zone 2
    - Conforming to ATEX 94/9/EC: Ⓢ II 3 G
    - Protection Level: EPL Gc
    - Ex Protection: Ex nA IIC
    - T Rating: *See website for more information (T6 to T3)*
    - EC Declaration of Conformity: 50309
    - ATEX Certificate: LCIE 15 ATEX 1003X
    - IECEx Certificate: IECEx LCIE 15.0010X
  - Dust: Zones 21 and 22
    - Conforming to ATEX 94/9/EC: Ⓢ II 2 D and Ⓢ II 3 D
    - Protection Level: EPL Db and Dc
    - Ex Protection: Ex tb IIIC and Ex tc IIIC

### Specifications

Features	Specifications
<b>Voltage:</b>	120-277 Vac; 50/60 Hz 347-480 Vac; 50/60 Hz
<b>Retrofit Equivalents:</b>	1x18W up to 3x58 W Fluorescent
<b>Lumens:</b>	2,200 – 7,800
<b>Efficacy:</b>	Up to 100 lm/w
<b>Color Temperatures:</b>	5650K
<b>CRI:</b>	70+
<b>Ambient Temperature:</b>	-40°C to +65°C (-40°F to +149°F)
<b>LED Lumen Depreciation (L70):</b>	60,000+ hours
<b>Replaceable Components:</b>	LED Driver, Lens Cover

- T Rating: *See website for more information [+63°C to +84°C (+145°F to +183°F)]*
- EC Declaration of Conformity: 50309
- ATEX Certificate, Zone 21: LCIE 15 ATEX 3006X
- ATEX Certificate, Zone 22: LCIE 15 ATEX 1003X
- IECEx Certificate, Zone 21 and 22: IECEx LCIE 15.0010X
- Ambient Temperature: -40°C up to +65°C (-40°F up to +149°F)
- Index of Protection: IP66, IK08
- Ex Standards: EN/IEC 60079-0; 60079-15; 60079-31
- Product Standards: EN/IEC 61347-1; 61347-2; 61598-1
- EMC Standards: EN/IEC 61000.4.2; 61000.4.3; 61000.4.4; 61000.4.5; 61000.4.6; 61000.4.8; 61000.4.11

# Areamaster™ Generation 2 and Areamaster™ Generation 2 HL LED

## Flood Lighting; Enclosed and Gasketed

Appleton™ Areamaster™ Generation 2 LED luminaires deliver best-in-class LED performance. The redesigned Areamaster LED provides greater versatility, with low lumen models from 9,000 to 19,500 lumens and high lumen (HL) models from 24,000 to 38,000 lumens and a choice of beam patterns to meet your diverse floodlighting needs. Featuring new optic designs for superior uniformity and coverage, Areamaster™ Generation 2 LED luminaires provide HID-equivalent lighting that saves over 75% in energy costs and practically eliminates maintenance burdens.

Areamaster™ Generation 2 LED and HL luminaires are certified for NEC and CEC Class I, Division 2 and Class II hazardous locations, marine and wet locations as well as ATEX/IECEX Zones 1, 2, 21 and 22. Industrial Areamaster™ Generation 2 LED and HL luminaires are cULus Certified for ordinary (unclassified) locations.



AMLG/ IAMLG  
9,500 to 19,500 lumens



AMLH/ IAMLH  
24,000 to 38,000 lumens

## Features



AMLG/ IAMLG

- Compact size and low weight
- Superior thermal heat sink design provides cool operation from -40°C to +65°C (-40°F to +149°F)
- High temperature silicone gaskets prevent water ingress and corrosion
- Replaceable LED drivers extend luminaire life even beyond 60,000 hours
- Yoke bracket is designed to utilize standard Areamaster™ slipfitters and offers a full 180° of adjustment



AMLH/ IAMLH

Frosted glass available for glare control



Heavy gauge stainless steel wire guard provides extra protection; polyester powder coated aluminum visor prevents unwanted overspill and uplight.



Gasketed front wiring compartment with screw terminal block, designed with easy-to-pull hinged handle and captive screws.



Optional safety cable design with multiple cast retention points.

# Areamaster™ Generation 2 and Areamaster™ Generation 2 HL LED *(continued)*

Flood Lighting; Enclosed and Gasketed

## Product Selection Key

	Certifications														Emergency Battery Backup	Ordinary Location	
	NEC/CEC										ATEX/IECEX						
	Class I				Class II						Class III	ATEX/IECEX					
	Division 1	Division 2	Zone 1	Zone 2	Division 1	Division 2	Zone 20	Zone 21	Zone 22	Zone 1		Zone 2	Zone 21	Zone 22			
AMLG / AMLH		•		•	•	•	•	•	•	•		•		•			
AMLZ / AMHZ												•	•	•	•		
IAMLG / IAMLH																•	

## NEC/CEC Certifications

### Ordinary Location (All Models)

- Marine Outside Type (Salt Water) for USA Only
- Wet Locations
- Type 3R,4,4X, IP66/67
- cCSAus: 164460 Certificate Number: 70073608

### Hazardous Location (AMLG and AMLH Models)

- Class I, Division 2, Groups A, B, C, D
- Class I, Zone 2, Group IIC
- Class II, Division 1 and 2, Groups E,F,G
- Class III
- Zone 20 and 21 Group IIIC, Zone 22 Group IIIB
- Simultaneous Exposure
- Marine Outside Type (Salt Water) for USA Only
- Wet Locations
- Type 3R,4,4X, IP66/67
- cCSAus: 164460 Certificate Number: 70073611

## ATEX/IECEX Certifications

### Hazardous Location (AMLG and AMLH Models)

- Certification Type: Areamaster Gen 2
  - Gas: Zone 2
    - Conforming to ATEX 2014/34/EU: Ⓢ II 3 G
    - Type of Protection: Ex ec IIC Gc
    - Temperature Class: T5 to T3
  - Dust: Zone 22
    - Conforming to ATEX 2014/34/EU: Ⓢ II 3 D
    - Type of Protection: Ex tc IIIC Dc
    - Surface Temperature: +85°C to +100°C (+185°F to +212°F)
- Ambient Temperature: -40°C up to +65°C (-40°F up to +268°F)
- EU Declaration of Conformity: 50317
- ATEX Certificate: SIRA 17ATEX3241
- IECEx Certificate: IECEx SIR 17.0079
- Index of Protection according EN/IEC 60529: IP66
- Impact Resistance (shock): IK10
- Photobiological Safety, IEC 62778 and IEC 62471: RG0

## Specifications

Features	Specifications
<b>Voltage:</b>	120-277 Vac, 170-300 VDC; 347-480 Vac; 50/60 Hz
<b>Retrofit Equivalents:</b>	175W-1500W HID
<b>Lumens:</b>	9,500 – 38,000
<b>Efficacy:</b>	Up to 140 lm/w
<b>Color Temperatures:</b>	5000K, 3000K
<b>CRI:</b>	70+, 80+
<b>Ambient Temperature:</b>	-40°C to +65°C (-40°F to +149°F)
<b>LED Lumen Depreciation (L70):</b>	100,000+ hours
<b>Replaceable Components:</b>	LED Driver, Lens Cover

# Baymaster™ and Baymaster™ HL LED

## High Bay Lighting; Enclosed and Gasketed

Appleton™ Baymaster™ LED luminaires quick-mount pendant system and secondary optics combine innovation, reliability, and versatility to bring you a best in class, high bay luminaire. With exceptional efficiency and unbeatable performance, this luminaire offers quicker installation speeds and easier maintenance. The Baymaster™ LED offers 9K, 15K and 19K lumen levels and the Baymaster™ HL offers 4K, 30K and 38K lumen levels. Both models offer two color temperatures and three NEMA beam patterns.

Baymaster™ LED and HL LED luminaires are certified for NEC and CEC Class I, Division 2 and Class II hazardous locations, marine and wet locations as well as ATEX/IECEX Zones 1, 2, 21 and 22. Industrial Baymaster™ LED and HL luminaires are cULus Certified for ordinary (unclassified) locations.



BLL(P)/IBLL(P)  
9,500 to 19,000 Lumens

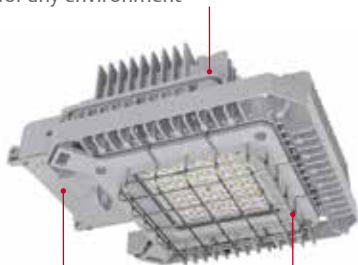


BHL(P)/IBHL(P)  
24,000 to 38,000 Lumens

## Features

Superior thermal heat sink design provides cool operation from  $-40^{\circ}\text{C}$  to  $+65^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$  to  $+149^{\circ}\text{F}$ ) – wide enough for any environment

Compact size and low weight for single person installation



6KV standard surge protection – protects your investment and keeps you up and running

Heavy gauge stainless steel wire guard provides extra protection

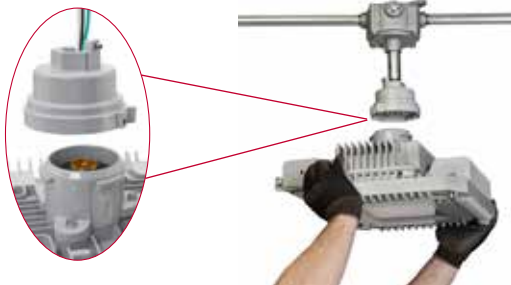
BLL(P)/IBLL(P)



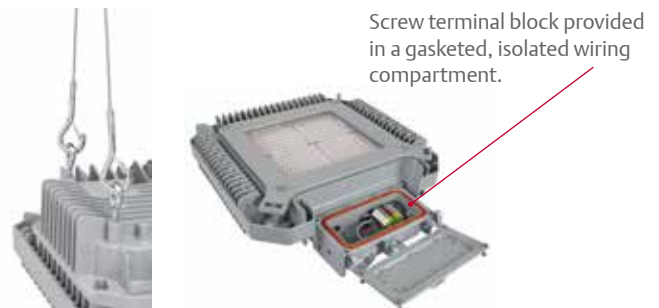
Replaceable cover and LED drivers extend luminaire life even beyond 84,000 hours

Optional frosted glass for increased glare control

BHL(P)/IBHL(P)



With its quick-mount pendant system, installation and maintenance have never been easier. Simply pre-wire the mounting hood, line the arrows up, and lock the Baymaster™ into place.



Screw terminal block provided in a gasketed, isolated wiring compartment.

As an alternative to our innovative quick mount, we offer an optional Y cable mounting kit. Simply attach 4 eyebolts and wire to the provided screw terminals in our field wiring compartment.

# Baymaster™ and Baymaster™ HL LED (continued)

## High Bay Lighting; Enclosed and Gasketed

### Product Selection Key

	Certifications														Emergency Battery Backup	Ordinary Location
	NEC/CEC															
	Class I				Class II					Class III	ATEX/IECEX					
	Division 1	Division 2	Zone 1	Zone 2	Division 1	Division 2	Zone 20	Zone 21	Zone 22		Zone 1	Zone 2	Zone 21	Zone 22		
BLL / BHL		•		•	•	•	•	•	•	•		•	•	•		
BLZ / BHZ												•	•	•	•	
IBLL / IBHL																•

### NEC/CEC Certifications

#### Ordinary Location (All Models)

- Marine outside type (salt water) for USA Only
- Wet locations
- Type 3R, 4, 4X
- IP66/67
- cCSAus: 164460, Certificate Number: 70073607

#### Hazardous Location (BHL and BLL Models)

- Class I, Division 2, Groups A, B, C, D
- Class I, Zone 2, Group IIC
- Class II, Division 1 and 2, Group E, F, G
- Class III
- Zone 20 and 21, Group IIIC
- Zone 22, Group IIIB
- Simultaneous Exposure
- cCSAus: 164460, Certificate Number: 70073611

### Specifications

Features	Specifications
<b>Voltage:</b>	120-277 Vac, 170-300 VDC; 347-480 Vac; 50/60 Hz
<b>Retrofit Equivalents:</b>	175W-1500W HID
<b>Lumens:</b>	9,500 – 38,000
<b>Efficacy:</b>	Up to 140 lm/w
<b>Color Temperatures:</b>	5000K, 3000K
<b>CRI:</b>	70+, 80+
<b>Ambient Temperature:</b>	-40°C to +65°C (-40°F to +149°F)
<b>LED Lumen Depreciation (L70):</b>	100,000+ hours
<b>Replaceable Components:</b>	LED Driver, Lens Cover

### ATEX/IECEX Certifications

#### Hazardous Location (BHL and BLL Models)

- Certification Type: Baymaster LED
  - Gas: Zone 2
    - Conforming to ATEX 2014/34/EU: Ⓢ II 3 G
    - Type of Protection: Ex ec IIC Gc
    - Temperature Class: T5 to T3
  - Dust: Zone 22
    - Conforming to ATEX 2014/34/EU: II 3 D
    - Type of Protection: Ex tc IIIC Dc
    - Surface Temperature: +85°C to +100°C (+185°F to +212°F)
- Ambient Temperature: -40°C up to +65°C (-40°F up to +268°F)
- ATEX Certificate: SIRA 17ATEX3241
- IECEX Certificate: IECEX SIR 17.0079
- Index of Protection according EN/IEC 60529: IP66
- Impact Resistance (shock): IK10
- Photobiological Safety, IEC 62778 and IEC 62471: RG0

# ATX™ DEMULED LED

## Emergency Lighting; Flameproof

ATX™ DEMULED LED Series luminaires provide adequate lighting and/or visual indication of access on exit routes during an evacuation in a hazardous environment. They can be installed in hazardous areas designated as Zone 1 and 2, 21 and 22



## Product Selection Key

Certifications										Emergency Battery Backup	Ordinary Location				
NEC/CEC															
Class I				Class II					Class III			ATEX/IECEx			
Division 1	Division 2	Zone 1	Zone 2	Division 1	Division 2	Zone 20	Zone 21	Zone 22		Zone 1	Zone 2	Zone 21	Zone 22		
										●	●	●	●	●	

## ATEX/IECEx Certifications

- Certification Type: DEMULED
  - Gas: Zone 1 and 2
    - Conforming to ATEX 94/9/CE: Ⓜ II 2 G
    - Type of Protection: Ex d IIC
    - Temperature Class: T6
  - Dust: Zone 21 and 22:
    - Conforming to ATEX 94/9/CE: Ⓜ II 2 D
    - Type of Protection: Ex tb IIIC
    - Surface Temperature: +75°C (167°F)
- Ambient Temperature: -30°C to +55°C (-22°F to +131°F) ①
- CE Declaration of Conformity: 50314
- ATEX Certificate: INERIS 15ATEX0056X
- IECEx Certificate: IECEx INE 15.0052X
- Index of Protection according EN/IEC 60529: IP66/68 (10m/1h)
- Impact Resistance (shock): IK09
- Internal Volume: > 2 dm<sup>3</sup> (122 in<sup>3</sup>) - 2 liters
- Conforming to NF AEAS

## Specifications

Features	Specifications
<b>Voltage:</b>	230 Vac, 50 Hz
<b>Lumens:</b>	400/ 45
<b>Efficacy:</b>	110 lm/w
<b>Color Temperatures:</b>	5650K
<b>CRI:</b>	70 +
<b>Ambient Temperature:</b>	<i>Escape route lighting:</i> -5°C to +30°C (-22°F to +131°F). <i>Space lighting:</i> -30°C to +55°C (-22°F to +131°F)
<b>LED Lumen Depreciation (L70):</b>	60,000+ hours
<b>Emergency Duration:</b>	1 Hour
<b>Replaceable Components:</b>	Driver, Battery

① Optimum operating temperature for battery is -5°C to +30°C (+23°F to +86°F).

# ATX™ FDBAES LED

## Emergency Lighting; Flameproof

Appleton™ ATX™ FDBAES Series LED luminaires provide emergency lighting in hazardous areas designated as Zone 1, 2, 21 and 22. These units are entirely self-contained in a flameproof enclosure, and include a built in automatic self-test system. Switched, unswitched, addressable switched and addressable unswitched versions are available.



## Product Selection Key

Certifications										Emergency Battery Backup	Ordinary Location				
NEC/CEC															
Class I				Class II				ATEX/IECEX							
Division 1	Division 2	Zone 1	Zone 2	Division 1	Division 2	Zone 20	Zone 21	Zone 22	Class III	Zone 1	Zone 2	Zone 21	Zone 22		
										•	•	•	•	•	

## ATEX/IECEX Certifications

- Certification Type: FLd
  - Gas: Zone 1 - 2
    - Conforming to ATEX 94/9/CE: Ⓜ II 2 G
    - Type of Protection: Ex d IIC
    - Temperature class: T6
  - Dust: Zone 21 - 22
    - Conforming to ATEX 94/9/CE: Ⓜ II 2 D
    - Type of Protection: Ex tD A21
    - Surface Temperature: T80°C (T176°F)
- Ambient Temperature: -40°C to +55°C (-40°F to +131°F) ①
- ATEX Certificate: LCIE 97/ ATEX 6012
- IECEX Certificate: IECEX LCI 04.0018
- Index of Protection according EN/IEC 60529: IP66/68
- Impact Resistance (shock): IK08
- Internal Volume: > 2 dm<sup>3</sup> (122 in<sup>3</sup>) - 2 liters
- Conforming to NF AEAS

## Specifications

Features	Specifications
<b>Voltage:</b>	230 Vac, 50/60 Hz
<b>Lumens:</b>	540/ 55
<b>Efficacy:</b>	110 lm/w
<b>Color Temperatures:</b>	5650K
<b>CRI:</b>	70 +
<b>Ambient Temperature:</b>	-40°C to +55°C (-40°F to +131°F)
<b>LED Lumen Depreciation (L70):</b>	60,000+ hours
<b>Emergency Duration:</b>	1 Hour
<b>Replaceable Components:</b>	Driver, Battery

① Optimum operating temperature for battery is -5°C to +30°C (+23°F to +86°F).

# ATX™ FNES LED

## Emergency Lighting

Appleton™ ATX™ FNES Series LED luminaires provide emergency lighting and/or visual indication of access and exit routes during an evacuation. They are designed for use in hazardous areas designated as Zone 2, 21 and 22. The FNES Series can be equipped with a variety of labels to indicate exit routes. These units are entirely self-contained, and include a built in automatic self-test system.



## Product Selection Key

Certifications														Emergency Battery Backup	Ordinary Location
NEC/CEC										ATEX/IECEX					
Class I				Class II						Class III	Zone 1	Zone 2	Zone 21		
Division 1	Division 2	Zone 1	Zone 2	Division 1	Division 2	Zone 20	Zone 21	Zone 22							
											•	•	•	•	

## ATEX/IECEX Certifications

- Certification Type: FLn
  - Gas: Zone 2
    - Conforming to ATEX 94/9/CE: Ⓜ II 3 G
    - Type of Protection ‘nA’: Type of Protection ‘nA’
    - Type of Protection ‘nR’: Ex nR IIC T4 Gc
    - Temperature class: T6 (nA) or T4 (nR)
    - Ambient Temperature: -20°C to +55°C (-4°F to +131°F) ①
  - Dust: Zone 21
    - Conforming to ATEX 94/9/CE: Ⓜ II 2 D
    - Type of Protection: Ex tD A21
    - Surface Temperature: T75°C (T167°F)
    - Ambient Temperature: -40°C to +55°C (-40°F to +131°F) ①
  - Dust: Zone 22
    - Conforming to ATEX 94/9/CE: Ⓜ II 3 D
    - Type of Protection: Ex t IIIC Dc
    - Surface Temperature: T75°C (T167°F)
    - Ambient Temperature: -20°C to +55°C (-4°F to +131°F) ①

## Specifications

Features	Specifications
<b>Voltage:</b>	230 Vac, 50/60 Hz
<b>Lumens:</b>	540/ 55
<b>Efficacy:</b>	110 lm/w
<b>Color Temperatures:</b>	5650K
<b>CRI:</b>	70 +
<b>Ambient Temperature:</b>	-20°C/-40°C to +55°C (-4°C/-40°F to +131°F)
<b>LED Lumen Depreciation (L70):</b>	60,000+ hours
<b>Emergency Duration:</b>	1 Hour
<b>Replaceable Components:</b>	Driver, Battery

- ATEX Certificate: LCIE 03 ATEX 6072 (Zone 2-22), LCIE 02 ATEX 6067 (Zone 21)
- IECEx Certificate: IECEx LCI 04.0021 (Zone 2-22)
- Index of Protection according EN/IEC 60529: IP66/67
- Impact Resistance (shock): IK10
- Conforming to NF AEAS

① Optimum operating temperature for battery is -5°C to +30°C (+23°F to +86°F).



# N2LED Emergency

## Emergency Lighting; Enclosed and Gasketed

The Appleton™ N2LED Series emergency system provides illumination for safe egress through doors, aisle-ways, stairs, walkways, exit paths, and outer perimeter walls during interruption of normal power. The non-metallic emergency egress lighting systems is available with up to two direct mounted lamps on the main or remote units. The system supports up to 4 light heads in any main/remote combination utilizing up to 6 Watts of output power. This allows for a main unit without any light heads to drive up to 4 remote units or any other combination of 4 lights. They provide 100% lumen output for 90 minutes of operation with four light heads or 180 minutes of operation with two light heads.



## Product Selection Key

Certifications														Emergency Battery Backup	Ordinary Location
NEC/CEC										ATEX/IECEX					
Class I				Class II					Class III	Zone 1	Zone 2	Zone 21	Zone 22		
Division 1	Division 2	Zone 1	Zone 2	Division 1	Division 2	Zone 20	Zone 21	Zone 22		Zone 1	Zone 2	Zone 21	Zone 22		
	•		•											•	

## NEC/CEC Certifications

- UL Standards:
  - 1598A (Supplemental Requirements for Luminaires for Installation on Marine Vessels)
  - 924 (Emergency Lighting and Power Equipment)
  - 844 (Electric Luminaires Hazardous Locations)
- CSA Standards:
  - C22.2 No. 141-M1985 unit equipment for emergency lighting
  - C22.2 No. 137-M1981 non-incendive electrical equipment for use in Class I, Division 2 hazardous locations
- Life Safety Code NFPA101® – Section 5-9 (Emergency Lighting)
- Marine wet locations suitability, Type 4X
- cCSAus Certified: 2715744

## Specifications

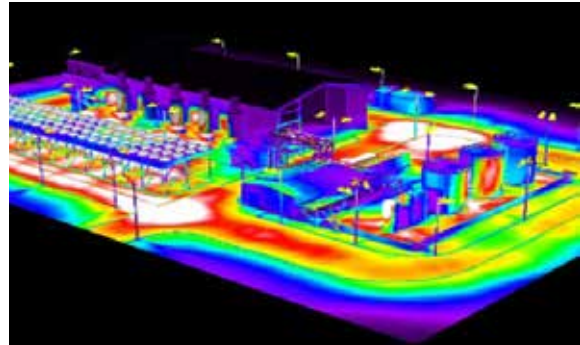
Features	Specifications
<b>Voltage:</b>	120/277 Vac, 50/60 Hz
<b>Ambient Temperature:</b>	0°C to +55°C (+32°F to +131°F)
<b>Replaceable Components:</b>	Lamps, Battery Pack, Circuit Charger Board

# Lighting Services

## Lighting Layouts

Let Emerson's team of Lighting Applications Engineers design a professional solution to accommodate your diverse lighting needs. We design single rooms, whole floors, entire buildings and outdoor projects.

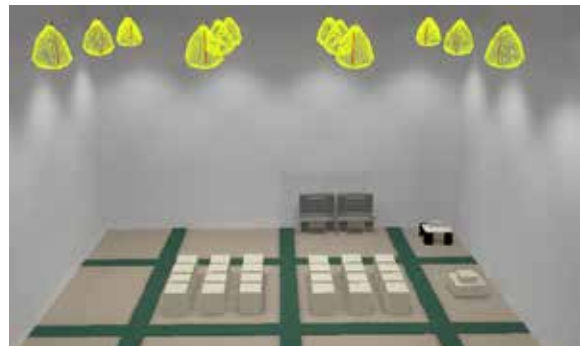
E-mail available lighting, site, building or floor plan drawings, along with installation specifics to: [appgrp.lighting\\_layout@emerson.com](mailto:appgrp.lighting_layout@emerson.com)



## DIALux™ and the Appleton™ Plug-In™

DIALux is one of the world's leading software programs for planning, calculating and visualizing light. The complimentary Appleton™ Plug-In contains IES files for Appleton™ luminaires. Users have the ability to search for a specific solution according to area classification, light source, mounting type or available globe option.

Designers have the freedom to customize their lighting solutions by downloading the free software and the Appleton™ Plug-In at [www.masteringled.com](http://www.masteringled.com).



## Sample Our Solutions

Installing a sample is the best method to evaluate a luminaire's suitability for a particular application or location.

Try one out by contacting your local Appleton™ representative to request a sample today.



### LEARN MORE

The new standard for reliable LED lighting that saves energy and maintenance costs while delivering superior illumination is here. See it clearly. Contact your local Appleton™ representative or visit [www.masteringled.com](http://www.masteringled.com) today.



Our full-range of LED lighting solutions combine the power of advanced LED technology and precision engineering to deliver superior illumination with unparalleled protection.

# Maximize usable light enabling you to comfortably and safely work in harsh or hazardous environments.



Appleton™ is the cornerstone brand of Emerson's Electrical Apparatus and Lighting business; trusted worldwide to make electrical installations safer, more productive and more reliable.

**United States (Headquarters)**  
Appleton™ Grp LLC  
9377 W. Higgins Road  
Rosemont, IL 60018  
United States  
T +1 800 621 1506

**Europe**  
ATX SAS  
Espace Industriel Nord  
35, rue André Durocheux,  
CS 98017  
80084 Amiens Cedex 2, France  
T +33 3 2254 1390

**Canada**  
EGS Electrical Group Canada Ltd.  
99 Union Street  
Elmira ON, N3B 3L7  
Canada  
T +1 888 765 2226

**Asia Pacific**  
EGS Private Ltd.  
Block 4008, Ang Mo Kio Ave 10,  
#04-16 TechPlace 1,  
Singapore 569625  
T +65 6556 1100

**Latin America**  
EGS Comercializadora Mexico S  
de RL de CV  
Calle 10 N°145 Piso 3  
Col. San Pedro de los Pinos  
Del. Álvaro Obregon  
Ciudad de México. 01180  
T +52 55 5809 5049

**Australia Sales Office**  
Bayswater, Victoria  
T +61 3 9721 0348

**China Sales Office**  
Shanghai  
T +86 21 3338 7000

**Middle East Sales Office**  
Dammam, Saudi Arabia  
T +966 13 510 3702

**Chile Sales Office**  
Las Condes  
T +56 2928 4819

**India Sales Office**  
Chennai  
T +91 44 3919 7300

**Korea Sales Office**  
Seoul  
T +82 2 3483 1555

 [Emerson.com](http://Emerson.com)

 [LinkedIn.com/company/emerson](https://www.linkedin.com/company/emerson)

The Emerson logo is a trademark and service mark of Emerson Electric Co. Appleton is a registered trademark of Appleton Grp LLC. All other marks are the property of their respective owners. © 2017 Emerson Electric Co. All rights reserved.



**CONSIDER IT SOLVED™**