LED Retrofit Lamps Approved for Hazardous Locations

A Smart, Safe Switch From HID

AVAILABLE ONLY IN TYPE B

RATED FOR:

CLASS I, DIVISION 2, GROUPS A, B, C, D

CLASS II, DIVISION 1, GROUPS E, F, G

CLASS II, DIVISION 2, GROUPS F, G

INDUSTRY-LEADING LUMEN OUTPUT IN COMPACT FORM

UL-CERTIFIED FIXTURES*

GE Lighting Filtr-Gard® H2 Series
GE Lighting Powr-Gard® H9 Series
Crouse-Hinds Champ® VMV
Appleton Mercmaster™ II
Appleton Mercmaster™ III
Hubbell Killark® VM Series
Holophane Petrolux® P3M
Holophane Petrolux® II PETL
Thomas & Betts Hazlux® 3 Series

50,000-hour rated life
2.5x longer life than HID

50% less energy usage
with similar light output - up to 23,500 lumens

E39 socket adapter included with E26 base lamps

High maximum temperature ratings
21W: 65°C | 35W: 55°C
45W: 45°C | 80W: 55°C
150W: 40°C

Minimum starting temperature: -20°C

For use at drilling rigs, petrochemical facilities, food and beverage facilities and other heavy-industry areas

*Suitable luminaire fittings may vary. Contact your Current representative or check installation guide for details.

What's Considered a Hazardous Location?

The National Electrical Code (NEC) defines hazardous locations in terms of **CLASS, DIVISION** and **GROUP**:

- **CLASS I** locations are those in which flammable gases or vapors are or may be present in the air in quantities sufficient to produce explosive or ignitable mixtures.
- **CLASS II** locations are those that are hazardous because of the presence of combustible dust.

Each **CLASS** is further defined as either **DIVISION 1** or **DIVISION 2**.

- **DIVISION 1** is an environment that is normally hazardous.
- **DIVISION 2** is an environment that is not normally hazardous.

GROUP defines the specific hazardous material in the surrounding atmosphere. See the table below for specific examples.

NEC Class	Division	Group	Typical Atmosphere and Auto-ignition Temperatures
I - Gases, Vapors	2 - Not normally present	A	Acetylene (305°C, 581°F)
		B	Hydrogen (502°C, 986°F) manufactured gases containing more than 30% hydrogen (by volume)
		C	Ethylene (450°C, 842°F) Cylopropane (503°C, 938°F)
		D	Hexane (225°C, 437°F) Butane (288°C, 550°F) Propane (450°C, 842°F) Acetone (465°C, 869°F) Benzene (420°C, 788°F) Gasoline (280°-471°C, 536°-880°F)
II - Combustible Dusts	1 - Normally present 2 - Not normally present	E	Metal Dusts (Aluminum, Magnesium)
		F	Carbonaceous Dusts (Coal, Carbon black, Charcoal, Coke)
		G	Dusts not in Groups E or F (Flour, Grain, Wood, Plastic)

Typical Hazardous Substances and Auto-ignition Temperatures by Group

How are LED Retrofits Certified?

UL evaluates Retrofit Luminaire Conversion Kits for Use in Hazardous Locations in accordance with the appropriate Standards. LED Lamps are UL-certified as part of Retrofit Kits that also include an installation guide detailing instructions for retrofitting hazardous location luminaires and a fixture label that indicates the lamp being used and associated new temperature code.

Current's LED lamps are certified for use in a variety of hazardous locations:

Class I, Division 2, Groups A, B, C, D
Class II, Division 1, Groups E, F, G
Class II, Division 2, Groups F, G

See lamp installation guides for full luminaire fitting details.

Temperature Profiles & Approved Fixtures

Temperature Codes are used to convey the maximum temperature of Hazardous Location systems. LED replacement lamps typically run cooler than HID lamps, so the Temperature Codes for LED lamps may correspond to lower temperatures.

TEMPERATURE CODE IDENTIFICATION NUMBERS

Identification Number	Max. Temp. Range (°C)	Identification Number	Max. Temp. Range (°C)
T1	450	T3A	180
T2	300	T3B	165
T2A	280	T3C	160
T2B	260	T4	135
T2C	230	T4A	120
T2D	215	T5	100
T3	200	T6	85

CURRENT HAZARDOUS LOCATION LAMPS - TEMPERATURE PROFILE DATA

HAZ Model Family	Max. Ambient Temp. (°C)	Operating Temp. Code
LED21ED17	65	T4A
LED35ED17	55	T4
LED45ED17	45	T4
LED80ED23.5	55	T4
LED150ED28	40	T4

CURRENT HAZARDOUS LOCATION LAMPS - APPROVED UL FIXTURES BY CLASSIFICATION

Classifications: Class 1, Division 2, Groups A, B, C, D			
UL HazLoc Fixture Type	**ED17**	**ED23.5**	**ED28**
GE Filtr-Gard® H2	Yes	Yes	Yes
GE Powr-Gard® H9	-	-	-
Appleton Mercmaster™ II	Yes	Yes	Yes
Appleton Mercmaster™ III	Yes	Yes	Yes
Crouse-Hinds Champ® VMV	Yes	Yes	Yes
Thomas & Betts Hazlux® 3	Yes	Yes	Yes
Hubbell Killark® VM Series	Yes	Yes	Yes
Holophane Petrolux® P3M	Yes	Yes	-
Holophane Petrolux® II PETL	-	-	Yes

Classifications: Class II, Division 1, Groups E, F, G; Class II, Division 2, Groups F, G			
UL HazLoc Fixture Type	**ED17**	**ED23.5**	**ED28**
GE Filtr-Gard® H2	-	-	-
GE Powr-Gard® H9	Yes	Yes	-
Appleton Mercmaster™ II	Yes	Yes	Yes
Appleton Mercmaster™ III	Yes	Yes	Yes
Crouse-Hinds Champ® VMV	Yes	-	Yes
Thomas & Betts Hazlux® 3	Yes	Yes	Yes
Hubbell Killark® VM Series	Yes	Yes	Yes
Holophane Petrolux® P3M	Yes	Yes	-
Holophane Petrolux® II PETL	-	-	Yes

FIXTURE TEMPERATURE PROFILE DATA WITH TRADITIONAL HID LAMPS

UL HazLoc Fixture Type	Original HID Lamp Wattage	Original Fixture Rated Tcode Max. Ambient Temp. 40°C	Original Fixture Rated Tcode Max. Ambient Temp. 55°C	Original Fixture Rated Tcode Max. Ambient Temp. 65°C
Classifications: Class 1, Division 2 – Groups A, B, C, D				
GE Filtr-Gard® H2	50	T3A	T3	T3
GE Filtr-Gard® H2	70	T3A	T3	T3
GE Filtr-Gard® H2	100	T2B	T2C	T2C
GE Filtr-Gard® H2	150	T2A	T2	T2
GE Filtr-Gard® H2	175	T2B	N/A	N/A
GE Filtr-Gard® H2	250	T1	N/A	N/A
GE Filtr-Gard® H2	400	T1	N/A	N/A
Appleton Mercmaster™ II	50	T3	N/A	N/A
Appleton Mercmaster™ II	70	T3	N/A	N/A
Appleton Mercmaster™ II	100	T2C	N/A	N/A
Appleton Mercmaster™ II	150	T2A	N/A	N/A
Appleton Mercmaster™ II	175	T2B	N/A	N/A
Appleton Mercmaster™ III	50	T3B	T3A	T3
Appleton Mercmaster™ III	70	T3A	T3A	T3A
Appleton Mercmaster™ III	100	T2D	T2D	T2D
Appleton Mercmaster™ III	150	T2B	T2A	N/A
Appleton Mercmaster™ III	175	T2B	T2A	T2
Appleton Mercmaster™ III	250	T2	T2	N/A
Crouse-Hinds Champ® VMV	50	T3A	T3A	T3
Crouse-Hinds Champ® VMV	70	T3	T3	N/A
Crouse-Hinds Champ® VMV	100	T2C	T2B	N/A
Crouse-Hinds Champ® VMV	150	T2A	T2	N/A
Crouse-Hinds Champ® VMV	175	T2A	N/A	N/A
Crouse-Hinds Champ® VMV	250	325°C	350°C	N/A
Crouse-Hinds Champ® VMV	400	T1	T1	N/A
Thomas & Betts Hazlux® 3	50	T3C	N/A	N/A
Thomas & Betts Hazlux® 3	70	T3A	N/A	N/A
Thomas & Betts Hazlux® 3	100	T3	N/A	N/A
Thomas & Betts Hazlux® 3	150	T2A	N/A	N/A
Thomas & Betts Hazlux® 3	175	T2	N/A	N/A
Thomas & Betts Hazlux® 3	250	T2	N/A	N/A
Thomas & Betts Hazlux® 3	400	T1	N/A	N/A
Hubbell Killark® VM Series	50	T3B	T3A	T3
Hubbell Killark® VM Series	70	T2C	T2C	T2B
Hubbell Killark® VM Series	100	T2B	T2A	T2A
Hubbell Killark® VM Series	150	T2A	T2A	N/A
Hubbell Killark® VM Series	175	T2A	T2	N/A
Hubbell Killark® VM Series	250	T2B	T2A	N/A
Hubbell Killark® VM Series	400	T2A	T2	N/A
Holophane Petrolux® P3M	50	T3C	T3C	T3B
Holophane Petrolux® P3M	70	T3B	T3A	T3A
Holophane Petrolux® P3M	100	T2B	T2B	T2D
Holophane Petrolux® P3M	150	T2B	T2B	N/A
Holophane Petrolux® P3M	175	T2A	T2A	T2B
Holophane Petrolux® II PETL	175	T2B	T2B	T2B
Holophane Petrolux® II PETL	250	T2A	N/A	N/A
Holophane Petrolux® II PETL	400	T2	N/A	N/A

Lower heat profile = Lower temperature code

LED HID for Hazardous Locations

NEMA LED HID Wattage Equivalency

In February of 2021, the National Electrical Manufacturers Association (NEMA) published NEMA LL 10-2020 *Replacing HID Lamps with LED Lamps: Light Output Equivalency Claims*. Current uses this Standard for LED products replacing HID lamps, meeting or exceeding the minimum LED light output for equivalency claims. The LED wattage equivalency varies based on the type of HID lamp being replaced - Metal Halide (MH) or High Pressure Sodium (HPS).

Metal Halide Lamp Wattage (W)	Metal Halide Initial Light Output (lm)	Minimum LED Lamp Initial Light Output (lm)	Current LED Ordinary Location Retrofit Lamps Active Cooling	Current LED Selectable Ordinary Location Retrofit Lamps Active Cooling	Current LED Selectable Ordinary Location Retrofit Lamps Passive Cooling	Current LED Hazardous Location Retrofit Lamps Active Cooling
50	3,200	2,000	LED21ED17	LED/LC/ED17	LED/LC/ED17P	LED21ED17/HAZ
70	5,200	3,000	LED21ED17	LED/LC/ED17	LED/LC/ED17P	LED21ED17/HAZ
100	8,100	5,000	LED35ED17; LED45ED17	LED/LC/ED17		LED35ED17/HAZ; LED45ED17/HAZ
150	12,000	7,500	LED50ED23.5	LED/LC/ED23.5	LED/LC/ED23.5P; LED/LC/ED28P	
175	11,000	7,000	LED45ED17; LED50ED23.5	LED/LC/ED17; LED/LC/ED23.5	LED/LC/ED23.5P; LED/LC/ED28P	
250	19,100	12,000	LED80ED23.5	LED/LC/ED23.5	LED/LC/ED28P	LED80ED23.5/HAZ
320	25,600	16,500	LED115ED28	LED/LC/ED28		
350	28,400	18,000	LED115ED28	LED/LC/ED28		
360	29,400	19,000	LED150ED28; LED120ED18	LED/LC/ED28		LED150ED28/HAZ
400	33,100	21,500	LED150ED28; LED180ED18	LED/LC/ED28; LED/LC/ED37		LED150ED28/HAZ
750	72,300	46,500	LED360ED37	LED/LC/ED37		
1,000	100,280	65,000	LED450BT56; LED470BT56	LED/LC/ED37		
1,500	153,000	99,450	LED520BT56			

HPS Lamp Wattage (W)	HPS Initial Light Output (lm)	Minimum LED Lamp Initial Light Output (lm)	Current LED Ordinary Location Retrofit Lamps Active Cooling	Current LED Selectable Ordinary Location Retrofit Lamps Active Cooling	Current LED Selectable Ordinary Location Retrofit Lamps Passive Cooling	Current LED Hazardous Location Retrofit Lamps Active Cooling
50	4,500	2,500	LED21ED17	LED/LC/ED17	LED/LC/ED17P	LED21ED17/HAZ
70	6,300	4,000	LED35ED17	LED/LC/ED17	LED/LC/ED17P	LED35ED17/HAZ
100	9,500	6,000	LED45ED17; LED50ED23.5	LED/LC/ED17; LED/LC/ED23.5	LED/LC/ED23.5P; LED/LC/ED28P	LED45ED17/HAZ
150	13,000	8,500	LED80ED23.5	LED/LC/ED23.5	LED/LC/ED28P	LED80ED23.5/HAZ
200	19,500	12,500		LED/LC/ED23.5		
250	26,000	17,000	LED115ED28; LED120ED18	LED/LC/ED28		
310	33,200	21,500	LED150ED28	LED/LC/ED28		LED150ED28/HAZ
400	44,000	29,000	LED180ED18; LED270BT56	LED/LC/ED37		
600	66,000	42,500	LED360ED37	LED/LC/ED37		
750	82,500	53,500	LED450BT56	LED/LC/ED37		
1,000	110,000	73,000	LED470BT56; LED520BT56			

LED HID for Hazardous Locations

CUSTOMER NAME
PROJECT NAME
DATE NOTES

A Versatile Turn for the Better

LED lamps approved for hazardous locations from Current offer industry-leading light output, efficiency, and versatility, with an E39 adapter included with every E26 base lamp. The quality and reliability of these lamps set us apart from the competition.


ED17


ED23.5


ED28

LED HID - Type B - Hazardous Locations

Bulb Shape	Base Type*	Watts	Order Code	Description	Volts	Carton Qty[2]	MOL (in)	MOD (in)	Lumens (Initial)	Color Temp. (Initial)	CRI	Wattage Replacement[8]	Rated Life L70 (Hrs)[1]	DLC[3,4]	Location Rating[5,@]
LED Replacement Lamps for HID - Ballast Bypass (Type B) - Hazardous Locations															
ED17 	E26/EX39	21	93134832	LED21ED17/730/HAZ	120-277	3	5.4	2.6	3,000	3000K	>70	50W HPS / 70W MH	50,000	-	Damp
	E26/EX39	21	93134833	LED21ED17/740/HAZ	120-277	3	5.4	2.6	3,000	4000K	>70	50W HPS / 70W MH	50,000	-	Damp
	E26/EX39	21	93134834	LED21ED17/750/HAZ	120-277	3	5.4	2.6	3,000	5000K	>70	50W HPS / 70W MH	50,000	-	Damp
	E26/EX39	35	93134830	LED35ED17/740/HAZ	120-277	3	5.4	2.6	5,000	4000K	>70	70W HPS / 100W MH	50,000	-	Damp
	E26/EX39	35	93134831	LED35ED17/750/HAZ	120-277	3	5.4	2.6	5,000	5000K	>70	70W HPS / 100W MH	50,000	-	Damp
	E26/EX39	45	93134846	LED45ED17/730/HAZ	120-277	3	5.4	2.6	6,000	3000K	>70	100W HPS / 100W MH	50,000	-	Damp
	E26/EX39	45	93134847	LED45ED17/740/HAZ	120-277	3	5.4	2.6	6,000	4000K	>70	100W HPS / 100W MH	50,000	-	Damp
	E26/EX39	45	93134848	LED45ED17/750/HAZ	120-277	3	5.4	2.6	6,000	5000K	>70	100W HPS / 100W MH	50,000	-	Damp
ED23.5 	E26/EX39	80	93141934	LED80ED23.5/740/HAZ	120-277	3	7.8	3.7	12,000	4000K	>70	150W HPS / 250W MH	50,000	-	Damp
	E26/EX39	80	93141935	LED80ED23.5/750/HAZ	120-277	3	7.8	3.7	12,000	5000K	>70	150W HPS / 250W MH	50,000	-	Damp
	EX39	80	93148146	LED80ED23.5/740/277/480/HAZ	277-480	3	7.8	3.7	12,000	4000K	>70	150W HPS / 250W MH	50,000	Yes	Damp
	EX39	80	93148147	LED80ED23.5/750/277/480/HAZ	277-480	3	7.8	3.7	12,000	5000K	>70	150W HPS / 250W MH	50,000	Yes	Damp
ED28 	EX39	150	93154635	LED150ED28/740/HAZ	120-277	3	8.3	4.1	23,500	4000K	>70	310W HPS / 400W MH	50,000	Yes	Damp
	EX39	150	93154636	LED150ED28/750/HAZ	120-277	3	8.3	4.1	23,500	5000K	>70	310W HPS / 400W MH	50,000	Yes	Damp
	EX39	150	93154647	LED150ED28/740/277/480/HAZ	277-480	3	8.3	4.1	23,500	4000K	>70	310W HPS / 400W MH	50,000	Yes	Damp
	EX39	150	93154648	LED150ED28/750/277/480/HAZ	277-480	3	8.3	4.1	23,500	5000K	>70	310W HPS / 400W MH	50,000	Yes	Damp

Additional Information for LED Replacement Lamps for HID: Open and Closed Rated - Ballast bypass required
These products are covered by U.S. Patents 10788163 and 10508776. These products may also be covered by other U.S. patents or pending applications.

*** EX39 socket adapter is included with HAZ E26 based lamps for mogul base applications.**

[1] The life rating is based on the hours of operation the lamp will provide before reaching 70% of its original lumen output (L70)
[2] Minimum order quantity = 1
[3] E26 based products are not eligible for DLC. Not all product variations on this page are DLC qualified. Visit qpl.designlights.org/solid-state-lighting to confirm qualification.
[4] Do not use with phase-cut dimmers. Dimming functions only with external Variac control devices.
[5] UL 1993 Environmental Requirements for LED LAMPS
Damp Location – Exterior or interior location that is normally or periodically subject to condensation of moisture in, on, or adjacent to electrical equipment, including partially protected locations
[8] Wattage Replacement levels correspond with wattage levels. Wattage Replacements based on NEMA Standards Publication LL 10-2020 *Replacing HID Lamps with LED Lamps: Light Output Equivalency Claims.*
[@] See Installation Guide for applicable Hazardous Location luminaire fittings

Information provided is subject to change without notice. Please verify all details with Current. All values are design or typical values when measured under laboratory conditions, and Current makes no warranty or guarantee, expressed or implied, that such performance will be obtained under end-use conditions.