

# HAZARDOUS LOCATION LIGHTING BASICS

CLASSES

DIVISIONS

GROUPS

<p>Class I: Gases</p> <p>Areas in which flammable gases or vapors in the air in sufficient quantities to ignite or explode.</p> <p>Class II: Dust</p> <p>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>Class III: Fibers</p> <p>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>Division 1: Always Present</p> <p>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>Division 2: Not Normally Present</p> <p>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>Class I: Gases</p> <p>Group A - Acetylene</p> <p>Group B - Hydrogen</p> <p>Group C - Ethylene</p> <p>Group D - Propane</p> <p>Class II: Dusts</p> <p>Group E - Electrically conductive dust</p> <p>Group F - Carbonaceous dust</p> <p>Group G - Agricultural and polymer dust</p>
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IEC ZONE CLASSIFICATIONS

COMPARISON

UL STANDARDS

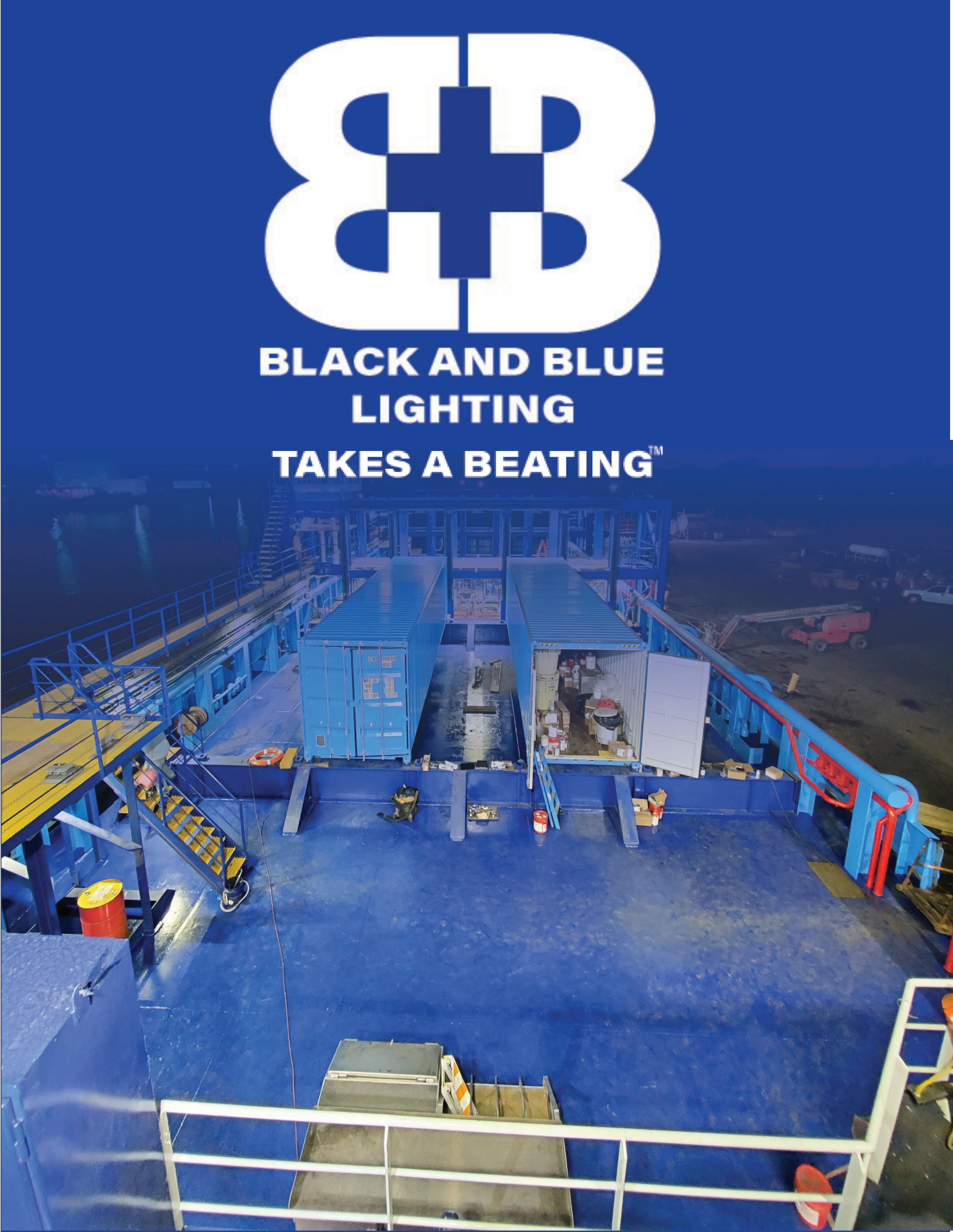
<p>IEC publication 60079-10 uses Zones to define the guidelines for classifying hazardous areas.</p> <p>Zone 0 - Areas where explosive gas atmosphere is continuously present or present for long periods of time.</p> <p>Zone 1 - Areas where explosive gas atmosphere is likely to occur in normal operation or can be expected to be present frequently.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Zone 22 - Areas in which combustible dust, as a cloud, is not likely to occur, but may occur infrequently and persist for only short</p>	Hazardous Material	NEC U.S.	IEC	Number	Certified Usage
	Gas or Vapor	Class I, Division 1	Zone 0, 1	844	Lighting fixtures for use in hazardous classified areas
		Class I, Division 2	Zone 2	924	Emergency lighting
	Dust	Class II, Division 1	Zone 20	1598	Lighting fixtures approved for wet locations
		Class II, Division 2	Zone 22	1598A	Lighting approved for use on marine vessels. Salt water corrosive rated
	Fibers or Flyings	Class III, Division 1	No Equivalent	8750	LED safety
		Class III, Division 2	No Equivalent		

IP CODES

IK RATINGS

T-CODES

1st Number: Solid Objects	2nd Number: Liquids	IK Code	Level of Protection Achieved	Maximum Operating Temperatures	Temperature Class (T-Code)
0 - No protection	0 - No protection	IK00	Not protected	°C °F	
1 - Objects greater than 50mm	1 - Vertically dripping	IK01	Protected against 0.14 joules impact.	450 842	T1
2 - Objects greater than 12.5mm	2 - Dripping up to 15°	IK02	Protected against 0.2 joules impact	300 572	T2
3 - Objects greater than 2.5mm	3 - Limited spraying	IK03	Protected against 0.35 joules impact.	280 536	T2A
4 - Objects greater than 1mm	4 - Splashing from all directions	IK04	Protected against 0.5 joules impact.	260 500	T2B
5 - Dust protected	5 - Hosing jets from all directions	IK05	Protected against 0.7 joules impact.	230 446	T2C
6 - Dust proof	6 - Strong hosing jets from all directions	IK06	Protected against 1 joules impact.	215 419	T2D
	7 - Temporary immersion	IK07	Protected against 2 joules impact.	200 392	T3
	8 - Continuous immersion	IK08	Protected against 5 joules impact.	180 356	T3A
	9K - Steam-jet cleaning	IK09	Protected against 10 joules impact.	165 329	T3B
		IK10	Protected against 20 joules impact.	160 320	T3C
				135 275	T4
				120 248	T4A
				100 212	T5
				85 185	T6





# Hazardous Lighting

## Rectangle Series H1

For explosion proof environments

Class I Division 1, Group C, D Class I Division 2, Group A, B, C, D Class II Division 1, Group E, F, G Class II Division 2, Group F, G Class III Class I, Zone 1, Group IIB Class I, Zone 2, Group IIC Zone 21, Zone 22



## Rectangle Series H2

For harsh and hazardous environments

Class I Division 2, Group A, B, C, D Class II Division 1, Group E, F, G Class II Division 2, Group F, G Class III Class I, Zone 2, Group IIC Zone 21, Zone 22



Wattage: 80W 100W 150W 200W  
Lumens (Lm): 12,800, 16,000, 24,000, 32,000  
Warranty: LEDs 10 Years, Driver 7 Years

## Line Tuff Series

For explosion proof environments with low ceiling applications

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

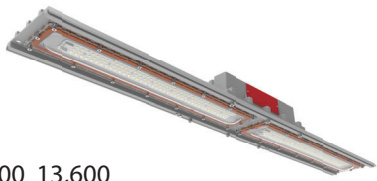


Wattage: 20W 40W 60W 80W 100W 120W  
Lumens (Lm): 2,800, 5,600, 8,400 11,200, 14,000 16,800  
Warranty: LEDs 10 Years, Driver 7 Years

## Line Series

For hazardous environments with low ceiling applications

Class I Division 2, Groups A, B, C, D Class II Division 1, Groups E, F, G Class II Division 2, Groups F, G Class III Class I, Zone 2, Group IIC Zone 21, Zone 22



Wattage: 30W 40W 45W 60W 80W  
Lumens (Lm): 5,100 6,800 7,650 10,200 13,600  
Warranty: LEDs 10 Years, Driver 7 Years

## Jar Series

Jelly Jar style light for corrosive & hazardous locations

Class I Division 2, Group A, B, C, D Class II Division 1, Group E, F, G Class II Division 2, Group F, G Class III Class I, Zone 2, Group IIC



Wattage: 10W 20W 30W  
Lumens (Lm): 1,600 2,900 4,350

Warranty: LEDs 10 Years, Driver 7 Years

## Exit Series

Hazardous Area Emergency Light & Exit Sign Combo  
See specification sheet for options

Class I Division 2, Group A, B, C, D Class III Class I, Zone 2, Group IIC



## Rectangle Series Twin H1

For explosion proof environments

Class I Division 1, Group C, D Class I Division 2, Group A, B, C, D Class II Division 1, Group E, F, G Class II Division 2, Group F, G Class III Class I, Zone 1, Group IIB Class I, Zone 2, Group IIC Zone 21, Zone 22



Wattage: 300W 400W  
Lumens (Lm): 48,000, 64,000, Warranty: LEDs 10 Years, Driver 7 Years

## Rectangle-Mini Series H1

FOR LOW WATTAGE EXPLOSION PROOF APPLICATIONS

Class I Division 1, Group B, C, D Class I Division 2, Group A, B, C, D Class II Division 1, Group E, F, G Class II Division 2, Group F, G Class III Class I, Zone 1, Group IIB+H2 Class I, Zone 2, Group IIC Zone 21, Zone 22



Wattage: 20W 40W 60W  
Lumens (Lm): 3,200, 6,400, 9,600  
Warranty: LEDs 10 Years, Driver 7 Years

## Pack Series

For hazardous environments for with wall applications

Class I Division 2, Group A, B, C, D Class II Division 1, Group E, F, G Class II Division 2, Group F, G Class III Class I, Zone 2, Group IIC Zone 21 Zone 22 Simultaneous Presence



Wattage: 20W 30W  
Lumens (Lm): 3,400, 5,100  
Warranty: LEDs 10 Years, Driver 7 Years

## Rectangle Series Twin H2

For hazardous environments

Class I Division 2, Group A, B, C, D Class II Division 1, Group E, F, G Class II Division 2, Group F, G Class III Class I, Zone 2, Group IIC Zone 21, Zone 22



Wattage: 300W 400W  
Lumens (Lm): 48,000, 64,000  
Warranty: LEDs 10 Years, Driver 7 Years

## Rectangle-Mini Series H2

For a lower wattage, compact hazardous location light

Class I Division 2, Groups A, B, C, D Class II Division 1, Groups E, F, G Class III Class I, Zone 2, Group IIC Zone 21, Zone 22

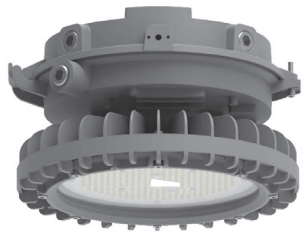


Wattage: 20W 40W 60W  
Lumens (Lm): 3,200, 6,400, 9,600  
Warranty: LEDs 10 Years, Driver 7 Years

## Circle-Max Series

For corrosive & hazardous locations

Class I Division 2, Group A, B, C, Class II Division 1, Group E, F, G Class II Division 2, Group F, G Class III Class I, Zone 2, Group IIC Zone 21, Zone 22



Wattage: 80W 100W 150W 200W  
Lumens (Lm): 13,600 17,000 25,500 34,000  
Warranty: LEDs 10 Years, Driver 7 Years

## Circle-Mini Series

For corrosive & hazardous locations

Class I Division 2, Group A, B, C, D Class II Division 1, Group E, F, G Class II Division 2, Group F, G Class III Class I, Zone 2, Group IIC Zone 21, Zone 22



Wattage 40W 60W  
Lumens (Lm): 6,500 10,200

Warranty: LEDs 10 Years, Driver 7 Years

# Industrial Lighting

## Cool MF Series

High Temperature Light to 90°C

Wattage: 100W 150W 200W 300W 450W  
Lumens (Lm): 18,000 24,000 32,000 48,000 72,000  
Warranty: Limited system warranty



## Flood ML Series

LED High Bay/Flood Light

Wattage: 100W 150W 200W 300W 400W 600W  
Lumens (Lm): 16,000 24,000 32,000 48,000 96,000  
Warranty: 5 years warranty

