HAZARDOUS LOCATION LED LIGHTING PRODUCTS

BLV

Hazardous Locations
Class 1 Div. 2 Groups ABCD,
Class 2 Div. 2 Groups FG,
Class 3 Div. 2

Operating Temperature
-29°C to 35°C

IP65, IP66 and IP67 Rated

Available from 2,500L to 23,000L

UL ratings: UL 844, UL 1598, UL 8750

BLVN

Hazardous Locations
Class 1 Div. 2 Groups ABCD,
Class 2 Div. 2 Groups FG,
Class 3 Div. 2

Operating Temperature
-29°C to 35°C

IP65, IP66 and IP67 Rated

Available from 2,500L to 7,500L

UL ratings: UL 844, UL 1598, UL 8750

BLHV

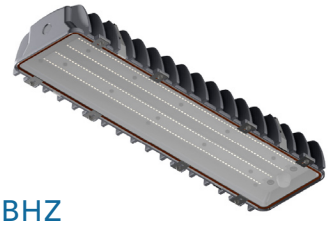
Hazardous Locations
Class 1 Div. 2 Groups ABCD,
Class 2 Div. 2 Groups FG,
Class 3 Div. 2

Operating Temperature
-20°C to 40°C

IP65, IP66, and IP67 Rated

Available from 10,000L to 32,000L

UL ratings: UL 844, UL 1598, UL 8750



BHZ

Hazardous Locations
Class 2 Div. 1 Groups EFG

Operating Temperature
-20°C to 40°C

Available from 2,500L to 11,500L

UL ratings: UL 844, UL 1598, UL 8750

HAZARDOUS LOCATION LIGHTING BASICS

CLASSES

Class I: Gases
Areas in which flammable gases or vapors in the air in sufficient quantities to ignite or explode.

Class II: Dust
Areas in which combustible dust may be suspended in the air or accumulates on electrical equipment in quantities sufficient to ignite or explode.

Class III: Fibers
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.

DIVISIONS

Division 1: Always Present
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.

Division 2: 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.

GROUPS

Class I: Gases
Group A - Acetylene
Group B - Hydrogen
Group C - Ethylene
Group D - Propane

Class II: Dust
Group E - Electrically conductive dust
Group F - Carbonaceous dust
Group G - Agricultural and polymer dust

For complete Information, refer to the National Electric Code (NEC)

IEC ZONE CLASSIFICATIONS

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

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.

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.

BJ TAKE INC.

220 Ramsey Drive, Dunnville, Ontario N1A 0A7 www.bjtake.com
phone: 905-774-5988 fax: 905-774-3439 email: sales@bjtake.com

COMPARISON

Hazardous Material	NEC U.S. Standards	IEC Standards
Gas or Vapor	Class I, Division 1	Zone 0, 1
	Class I, Division 2	Zone 2
Dust	Class II, Division 1	Zone 20
	Class II, Division 2	Zone 22
Fibers or Flyings	Class III, Division 1	No Equivalent
	Class III, Division 2	No Equivalent

UL STANDARDS

Number	Title
8750	- LED safety
1598	- Lighting fixtures approved for ordinary locations
1598A	- Lighting approved for use on marine vessels. Salt water corrosive rated.
924	- Emergency lighting and power equipment
844	- Lighting fixtures for use in hazardous areas

ENCLOSURE TYPES

Type	Fixture Use	IP Code Rating
1	- Indoor use, limited amounts of falling dirt	20
2	- Indoor use, limited amounts of falling water and dirt	22
3	- Indoor or outdoor use, rain, sleet, wind blown dust, external formation of ice	55
3R	- Indoor or outdoor use, rain, sleet, external formation of ice	24
3S	- Indoor or outdoor use, rain, sleet, wind blown dust, external mechanisms operable when ice laden	55
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
5	- Indoor use, settling airborne dust, falling dirt, non-corrosive liquids	52
6	- Indoor or outdoor use, hose directed water, temporary submersion, external formation of ice	67
6P	- Indoor or outdoor use, hose directed water, prolonged submersion, external formation of ice	68
7	- Indoor use, Class I, Groups A, B, C, or D hazardous locations	
8	- Indoor or outdoor use, Class I, Groups A, B, C, or D hazardous locations	
9	- Indoor use, Class II, Groups E, F, or G hazardous locations	
10	- For use in mining applications	
12	- Indoor use, circulating dust, falling dirt, dripping non-corrosive liquids	54
12K	- Indoor use, circulating dust, falling dirt, dripping non-corrosive liquids, provided with knockouts	54
13	- Indoor use, lint, dust, spraying water, oil and non-corrosive coolant	54

INGRESS PROTECTION (IP) CODES

First Number: Solid Objects

0 - No protection
1 - Objects greater than 50mm
2 - Objects greater than 12.5mm
3 - Objects greater than 2.5mm
4 - Objects greater than 1mm
5 - Dust protected
6 - Dust proof

Second Number: Liquids

0 - No protection
1 - Vertically dripping
2 - Dripping up to 15°
3 - Limited spraying
4 - Splashing from all directions
5 - Hosing jets from all directions
6 - Strong hosing jets from all directions
7 - Temporary immersion
8 - Continuous immersion
9K - Steam-jet cleaning

T - CODES

Maximum Operating Temperatures °C	°F	Temperature Class (T-Code)
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

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www.bjtake.com
email: sales@bjtake.com