

Hazardous Fundamental Guide

Classes, Divisions, Groups, IP Codes, UL, and IES Light Levels

CLASSES
<p>Class I: Gas or Vapor. Areas where inflammable gases or vapors may be present in sufficient quantities to produce an explosive or flammable mixture.</p> <p>Class II, Dust Areas where combustible dusts are present in sufficient quantities to produce a hazardous environment.</p> <p>Class III, Fiber Areas where ignitable fibers or flyings are present in sufficient quantities to produce ignitable mixtures.</p>

DIVISIONS
<p>Division 1: Always Present. Areas where the hazardous condition is normally present, either continuously or periodically.</p> <p>Division 2: Not Normally Present. Areas where the hazardous condition is present due to accidental rupture, release, breakage, or unusual faulty operation of a closed container or system.</p>

GROUPS
<p>Group A - Acetylene</p> <p>Group B - Hydrogen</p> <p>Group C - Ether</p> <p>Group D - Gasoline</p> <p>Group E - Metal Dust</p> <p>Group F - Coal Dust</p> <p>Group G - Grain Dust</p>

TEMPERATURE MARKINGS					
Maximum Surface Temperature		T-Code*	Maximum Surface Temperature		T-Code*
°C	°F		°C	°F	
450	840	T1	180	356	T3A
300	572	T2	165	329	T3B
280	536	T2A	160	320	T3C
260	500	T2B	135	275	T4
230	446	T2C	120	248	T4A
215	419	T2D	100	212	T5
210	392	T3	85	185	T6

* Based on 40°C (104°F) Ambient Operating Temperature. For complete information, refer to the National Electric Code (NEC).


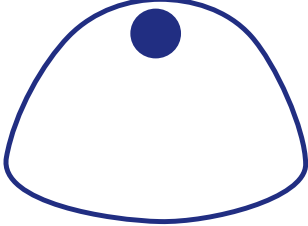
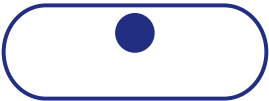
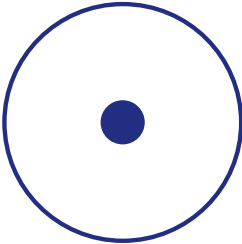
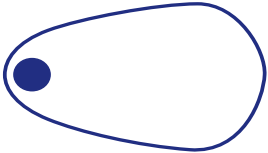
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IP RATINGS			
IP Code is a coding system to indicate the degree of protection by an enclosure against access to hazardous parts, ingress of solid objects, and ingress of water.			
First Character: Indicates the degree of protection against the ingress of solid objects		Second Character: Indicates the degree of protection against the ingress of water with harmful effects	
0	Non-protected	0	Non-protected
1	Protected against solid foreign objects of 50 mm diameter or greater	1	Protected against vertically falling water drops
2	Protected against solid foreign objects of 12.5 mm diameter or greater	2	Protected against vertically falling water drops as the enclosure is tilted 15°
3	Protected against solid foreign objects of 2.5 mm diameter or greater	3	Protected against spraying water
4	Protected against solid foreign objects of 1.0 mm diameter or greater	4	Protected against splashing water
5	Dust-protected	5	Protected against water jetting
6	Dust-tight	6	Protected against powerful water jetting
		7	Protected against temporary immersion
		8	Protected against continuous immersion

UL STANDARDS	
No.	Title
844	Luminaires for Use in Hazardous (Classified) Locations
924	Emergency Lighting and Power Equipment
1598	Luminaires
1598A	Supplemental Requirements for Luminaires Installed on Marine Vessels
8750	LED Equipment

IES RECOMMENDED LIGHTING LEVELS			
Task Area	Footcandles	Task Area	Footcandles
Paint Booth	100-150	Classrooms	50-75
Corridors	10-20	Cafeterias	50
Storage	10-50	Gymnasiums	30-50
Office Space	50-100	Manufacturing	50-500
Conference Room	20-50	Parking Areas	1-2

IES LATERAL LIGHT DISTRIBUTIONS			
	TYPE I Asymmetrical Long and Narrow		TYPE III Asymmetrical
	TYPE II Asymmetrical		TYPE V Symmetrical
	TYPE IV Asymmetrical Forward Throw		