

Rab Design™
Lighting Inc.



EXPLOSIONPROOF H.I.D. & Incandescent Lighting Fixtures

- Class I, II, III - Groups A, B, C, D, E, F, G
- High Quality Cast Aluminum Housings
- Heat and Impact Resistant Globes
- Suitable for Wet Locations
- Junction Box Provided



RAB

EB / EP / EX SYSTEMS • EHP / EMH SYSTEMS • ACCESSORIES





CLASSES - THE CANADIAN ELECTRIC CODE

Defines three classes of hazardous locations:

- Class I - Hazardous gases
- Class II - Hazardous dusts
- Class III - Hazardous fibers

DIVISIONS

Classes I & II each have two divisions:

Division 1 - The hazard is present continuously or intermittently during normal conditions.

Division 2 - The hazard is normally confined to closed containers or systems and would be present only by accident.

GROUPS

Classes I & II each have sub groups:

ABCDEFG - Within each group the hazardous materials have similar ignition temperature and explosion specs.

PAINT SPRAY AREAS

A special sub-classification of Class 1, Group D, Div.1. If a fixture is located where it will accumulate ignitable paint spray residue, it should be listed for Paint Spray Areas.

CODE DEFINITIONS

The above definitions are simplified. Consult the CEC for complete code requirements. The final determination of hazardous area requirements will be made by your local inspector. It is advisable to obtain this determination before ordering or installing electrical equipment.

*FREE TECHNICAL ASSISTANCE

RAB stands ready to assist you with lighting layouts and hazardous locations information. Just call for technical assistance. We would be pleased to help you.

TYPICAL CLASS I LOCATIONS

Areas involving:

- Petroleum
- Petrochemicals
- Flammable or combustible liquids
- Dry Cleaning
- Solvents
- Inhalation anesthetics
- Spray painting

TYPICAL CLASS II LOCATIONS

Areas involving:

- Grain
- Magnesium
- Starch
- Fireworks
- Pulverized sugar and cocoa

TYPICAL CLASS III LOCATIONS

Areas involving:

- Wood working plants
- Textile mills
- Cotton gins and cotton seed mills
- Flax plants

18-052 MARKING

(1) Electrical equipment approved for use in hazardous locations shall be so marked to indicate the class and for Class I and II locations the group, or the specific gas, vapour, or dust, for which the equipment has been approved.

(2) Electrical equipment approved for use in Class I hazardous locations may be marked with:

- The maximum external temperature; or
- One of the following temperature codes to indicate the maximum external temperature:

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

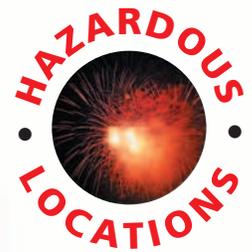
(3) If no maximum external temperature marking is shown on Class I equipment approved for the class and group, the equipment, if of the heat producing type (which excluded junction boxes, conduit fittings etc.), shall be considered as having the following maximum external temperature for the purpose of compliance with Rule 18-054:

- Group A - 280°C (536°F)
- Group B - 280°C (536°F)
- Group C - 160°C (320°F)
- Group D - 215°C (419°F)

CLASS I, GROUPS A, B, C, D - ATMOSPHERES

	IGNIT °C *		IGNIT °C *		IGNIT °C *
Group A - Atmospheres		Group D - Atmospheres		Group D - Atmospheres	
acetylene	305	acetic acid (glacial)	465	mesityl oxide	344
Group B - Atmospheres		acetone	465	Methane (natural gas)	540
acrolein (inhibited)	235	acrylonitrile	481	methanol (methyl alcohol)	385
butadiene	420	ammonia	651	3-methyl-1-butanol (isoamyl alcohol)	350
ethylene oxide	429	benzene	560	methyl ethyl ketone	515
hydrogen	400	butane	405	methyl isobutyl ketone	460
propylene oxide	448	1-butanol (butyl alcohol)	365	2-methyl-1-propanol (isobutyl alcohol)	426
Group C - Atmospheres		2-butanol (secondary butyl alcohol)	405	2-methyl-2-propanol (tertiary butyl alcohol)	480
acetaldehyde	175	n-butyl acetate	425	petroleum naphtha	287
allyl alcohol	378	isobutyl acetate	460	pyridine	482
n-butylaldehyde	241	sec-butyl alcohol	405	octanes	220
carbon monoxide	608	di-isobutylene	465	pentanes	260
crotonaldehyde	232	ethane	515	1-pentanol (amyl alcohol)	300
cyclopropane	500	ethanol (ethyl alcohol)	365	propane	450
diethyl ether (ethyl ether)	160	ethyl acetate	426	1-propanol (propyl alcohol)	440
diethylamine	312	ethylene diamine (anhydrous)	385	2-propanol (isopropyl alcohol)	398
ethylene	490	ethylene dichloride	412	propylene	460
ethylenimine	320	gasoline (56-60 octane)	280	styrene	490
hydrogen sulfide	260	haptanes	215	toluene	480
morpholine	310	hexanes	225	vinyl acetate	426
2-nitropropane	428	isoprene	220	vinyl chloride	472
tetrahydrofuran	321	isopropyl ether	443	xylenes	465
unsymmetrical dimethyl hydrazine (UDMH 1, 1-dimethyl hydrazine)	248				

* Ignition temperatures shown should be regarded as approximations only. Ignition temperatures may vary according to such factors as vapor/air mixture, size and space where ignition may occur, rate and duration of heating, oxygen concentration and other materials present.



H.I.D. Explosionproof Listings

LOCATION		LISTED MAXIMUM WATTAGE			Operating Temp. Code
Class, Division	Groups	Without Reflector	With Std. Dome Reflector	With 30° Angle Reflector	
High Pressure Sodium					
I, 1 & 2	C & D	150	150	150	T3C
II, 1 & 2	E, F & G	100	100	100	T3B
II, 1 & 2	E & F	150	150	150	T3A
III	-	100	100	100	T3B
Metal Halide					
I, 1 & 2	C & D	250	250	250	T3A
II, 1 & 2	C & D	-	175	175	T3A
II, 1 & 2	E, F & G	150	150	150	T3A

*See pages 4-5 for H.I.D. Products



INC Explosionproof Listings

LOCATION		LISTED MAXIMUM WATTAGE			Operating Temp. Code
Class, Division	Groups	Without Reflector	With Std. Dome Reflector	With 30° Angle Reflector	
Incandescent					
I, 1 & 2	C & D	300	300	300	T3C
I, 1 & 2	D Paint Spray	75	-	-	T4A
II, 1 & 2	E & F	200	150	200	T3
II, 1 & 2	E, F & G	100	-	150	T3C

*See pages 6-7 for Incandescent Products





- Class I, Groups C & D, Divisions 1 & 2
- Class II, Groups E, F & G, Divisions 1 & 2
- Class III
- Suitable for wet locations
- Complies with NEC, OSHA, CSA and NEMA specifications for above Classes and Groups.

SP LISTED CODE 844

Rab Design™
Lighting Inc.



EXPLOSIONPROOF

ORDERING INFO

WATTAGE

70,100 or 150 watt HPS
70,100, 175 or 250 watt MH

VOLTAGE

120, 208, 240, 277 or 347 volts.

BALLAST

HPS: Lag Type - High Reactance Autotransformer (HX-HPF)
Metal Halide: Constant Wattage Autotransformer (CWA)

MATERIALS

Cast aluminum housings, heat and impact resistant prismatic globe.

FEATURES

Integral ballast and factory seal for easy installation.

Easy relamping, just loosen thumb screw and twist off globe.

High Power Factor ballasts reduce energy costs.

Junction box provided with every fixture.

Heat dissipation fins permit cooler operating temperatures.

Lamp Mogul Base	Hub Size**	PENDANT		CEILING		BRACKET		
		Without Guard	With Guard	Without Guard	With Guard	Without Guard	With Guard	
High Pressure Sodium								
70W, HPS	1/2"	EHPP70	EHPP70G	EHPX70	EHPX70G	EHPB70	EHPB70G	
70W, HPS	3/4"	EHPP70-3/4	EHPP70G-3/4	EHPX70-3/4	EHPX70G-3/4	EHPB70-3/4	EHPB70G-3/4	
70W, HPS	1"	EHPP70-1	EHPP70G-1	EHPX70-1	EHPX70G-1	EHPB70-1	EHPB70G-1	
100W, HPS	1/2"	EHPP100	EHPP100G	EHPX100	EHPX100G	EHPB100	EHPB100G	
100W, HPS	3/4"	EHPP100-3/4	EHPP100G-3/4	EHPX100-3/4	EHPX100G-3/4	EHPB100-3/4	EHPB100G-3/4	
100W, HPS	1"	EHPP100-1	EHPP100G-1	EHPX100-1	EHPX100G-1	EHPB100-1	EHPB100G-1	
150W, HPS	1/2"	EHPP150	EHPP150G	EHPX150	EHPX150G	EHPB150	EHPB150G	
150W, HPS	3/4"	EHPP150-3/4	EHPP150G-3/4	EHPX150-3/4	EHPX150G-3/4	EHPB150-3/4	EHPB150G-3/4	
150W, HPS	1"	EHPP150-1	EHPP150G-1	EHPX150-1	EHPX150G-1	EHPB150-1	EHPB150G-1	
Metal Halide								
70W, MH MED	1/2"	EMHP70	EMHP70G	EMHX70	EMHX70G	EMHB70	EMHB70G	
70W, MH MED	3/4"	EMHP70-3/4	EMHP70G-3/4	EMHX70-3/4	EMHX70G-3/4	EMHB70-3/4	EMHB70G-3/4	
70W, MH MED	1"	EMHP70-1	EMHP70G-1	EMHX70-1	EMHX70G-1	EMHB70-1	EMHB70G-1	
100W, MH MED	1/2"	EMHP100	EMHP100G	EMHX100	EMHX100G	EMHB100	EMHB100G	
100W, MH MED	3/4"	EMHP100-3/4	EMHP100G-3/4	EMHX100-3/4	EMHX100G-3/4	EMHB100-3/4	EMHB100G-3/4	
100W, MH MED	1"	EMHP100-1	EMHP100G-1	EMHX100-1	EMHX100G-1	EMHB100-1	EMHB100G-1	
150W, MH MED	1/2"	EMHP150	EMHP150G	EMHX150	EMHX150G	EMHB150	EMHB150G	
150W, MH MED	3/4"	EMHP150-3/4	EMHP150G-3/4	EMHX150-3/4	EMHX150G-3/4	EMHB150-3/4	EMHB150G-3/4	
150W, MH MED	1"	EMHP150-1	EMHP150G-1	EMHX150-1	EMHX150G-1	EMHB150-1	EMHB150G-1	
175W, MH MOG	1/2"	EMHP175	EMHP175G	EMHX175	EMHX175G	EMHB175	EMHB175G	
175W, MH MOG	3/4"	EMHP175-3/4	EMHP175G-3/4	EMHX175-3/4	EMHX175G-3/4	EMHB175-3/4	EMHB175G-3/4	
175W, MH MOG	1"	EMHP175-1	EMHP175G-1	EMHX175-1	EMHX175G-1	EMHB175-1	EMHB175G-1	
250W, MH MOG	1/2"	EMHP250	EMHP250G	EMHX250	EMHX250G	EMHB250	EMHB250G	
250W, MH MOG	1"	EMHP250-1	EMHP250G-1	EMHX250-1	EMHX250G-1	EMHB250-1	EMHB250G-1	

LINE VOLTAGE

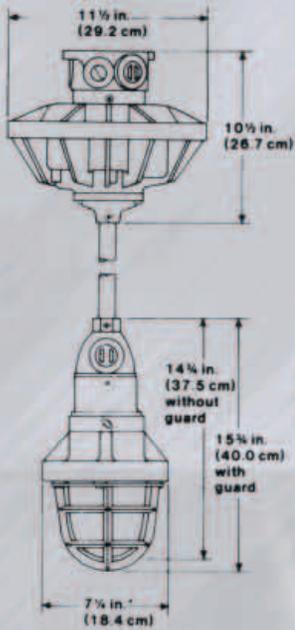
All fixtures are furnished standard with ballasts for 120V line. For 208V, 240V or 347V ballasts, add line voltage required to fixture catalog number (eg. **EMX175-347V**).

**FIXTURES FURNISHED COMPLETE WITH A CEILING JUNCTIONS BOX. Four 1/2", 3/4" or 1" tapped hubs in junction box.

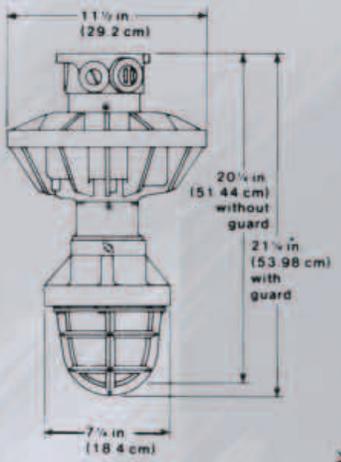
One tapped hub in TOP available at an additional cost. Add required hub to catalog number (EMHX175/w1/2tt). Available 1/2", 3/4" or 1". Metric size hubs available, consult factory.



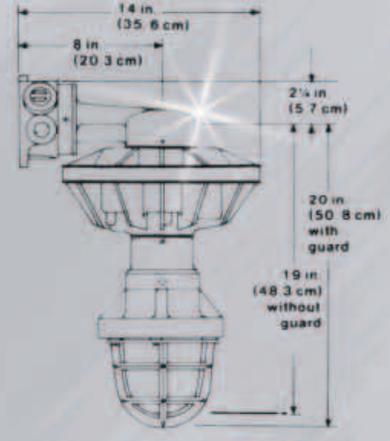
PENDANT



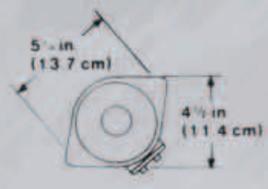
CEILING



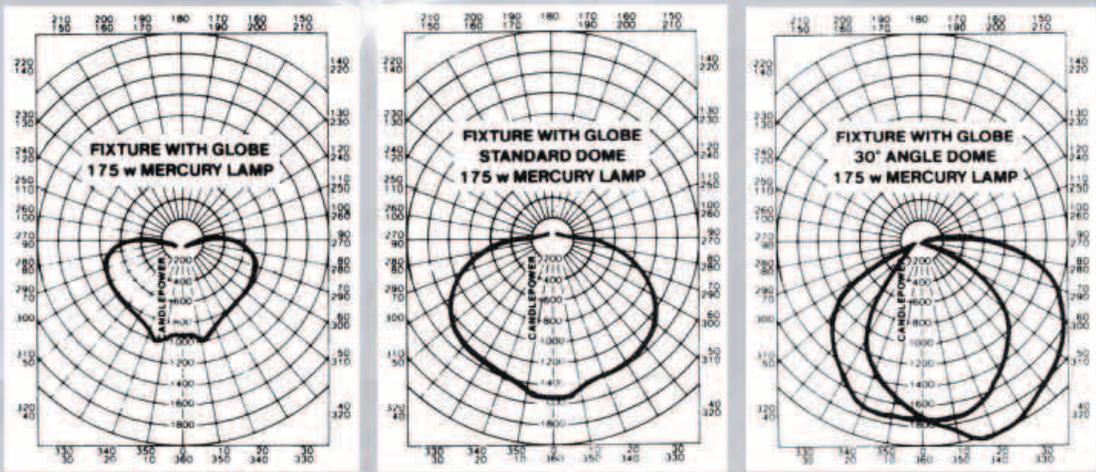
BRACKET



BOX



PHOTOMETRIC DATA



Candle power values shown are for 175 watt Mercury Lamps (not available). For H.P.S. and M.H. lamps, use multiplier shown.

Source	Watts	Lumens	Multiplier
H.P.S.	70W	5800	.674
H.P.S.	100W	9500	1.105
H.P.S.	150W	16000	1.860
M.H.	70W	5000	.581
M.H.	100W	7800	.907
M.H.	150W	11500	1.337
M.H.	175W	14000	1.627

COEFFICIENT OF UTILIZATION

Fixture with Globe - 175W Mercury Vapour Lamp

	%Ceiling Reflection			%Wall Reflection			Room Ratio		
	50	30	10	50	30	10	50	30	10
1	.78	.72	.68	.66	.62	.59	.53	.50	.48
2	.66	.58	.52	.56	.50	.45	.44	.41	.38
3	.57	.49	.42	.48	.42	.37	.38	.34	.31
4	.50	.41	.34	.42	.36	.30	.33	.29	.25
5	.44	.35	.29	.37	.31	.26	.30	.25	.21
6	.39	.31	.25	.34	.27	.22	.27	.22	.19
7	.35	.27	.22	.30	.24	.19	.25	.20	.16
8	.32	.24	.19	.27	.21	.17	.22	.18	.14
9	.29	.22	.17	.25	.19	.15	.20	.16	.12
10	.26	.19	.14	.22	.17	.13	.18	.14	.10

COEFFICIENT OF UTILIZATION

Fixture with Globe and Standard Dome Reflector - 175W Mercury Vapour Lamp

	%Ceiling Reflection			%Wall Reflection			Room Ratio		
	50	30	10	50	30	10	50	30	10
1	.79	.77	.74	.75	.73	.71	.69	.68	.67
2	.71	.67	.63	.67	.64	.61	.63	.60	.58
3	.64	.58	.54	.61	.56	.53	.57	.54	.51
4	.57	.51	.46	.54	.49	.46	.51	.47	.45
5	.51	.45	.40	.49	.44	.39	.46	.42	.39
6	.46	.40	.36	.44	.39	.35	.42	.38	.34
7	.42	.36	.31	.40	.35	.31	.38	.34	.30
8	.38	.32	.28	.36	.31	.27	.34	.30	.27
9	.35	.29	.25	.33	.28	.24	.32	.27	.24
10	.30	.24	.21	.29	.24	.20	.28	.23	.20

Please call Customer Service at Tel.1-800-268-0381 Fax. 1-800-668-5517 or contact your local Rab Design Sales Representative.





Rab Design™
Lighting Inc.

- Class I, Groups C & D, Divisions 1 & 2 (300 watt PS-25 max)
- Class II, Groups E, F & G, Divisions 1 & 2 (200 watt max)
- Class III (150 watt max)
- Listed for use in paint spray areas (75 watt max)
- Suitable for wet locations
- Complies with NEC, OSHA, CSA and NEMA specifications for all above Classes and Groups.

SP® LISTED CODE 844



*shown with guard

EXPLOSIONPROOF

ORDERING INFORMATION

WATTAGE

Fits all incandescent bulbs up to 300 watt PS-25.

VOLTAGE

Up to 250 volts.

MATERIALS

Cast aluminum housings, heat and impact resistant globe.

CONSTRUCTION FEATURES

Lamp compartment is factory sealed from wiring chamber, eliminating on-the-job sealing.

Inspection hole provides easily accessible splice space. There is nothing to hold while splicing to line.

Set screw to stem keeps fixture from turning during relamping.

Three close-up plugs are furnished with standard four hole junction box. Five close-up plugs are furnished with "T" type junction box. Mounting lugs are standard.

Hub Size**	# Hubs	PENDANT		CEILING		BRACKET		
		Without Guard	With Guard	Without Guard	With Guard	Without Guard	With Guard	
Incandescent								
1/2"	1	EP12	EP124	-	-	-	-	
3/4"	1	EP12-3/4	EP124-3/4	-	-	-	-	
1/2"	4	-	-	EX12	EX124	EB12	EB124	
1/2"	8	-	-	EX12T	EX124T	EB12T	EB124T	
3/4"	4	-	-	EX12-3/4	EX124-3/4	EB12-3/4	EB124-3/4	
3/4"	8	-	-	EX12T-3/4	EX124T-3/4	EB12T-3/4	EB124T-3/4	

**STANDARD FIXTURE HAS One 1/2" or 3/4" NPT hub centered on each of the four sides of the junction box. Special drilling. "T" type junction box has eight 1/2" or 3/4" NPT hubs positioned as per diagram shown. Metric size hubs available, consult factory.



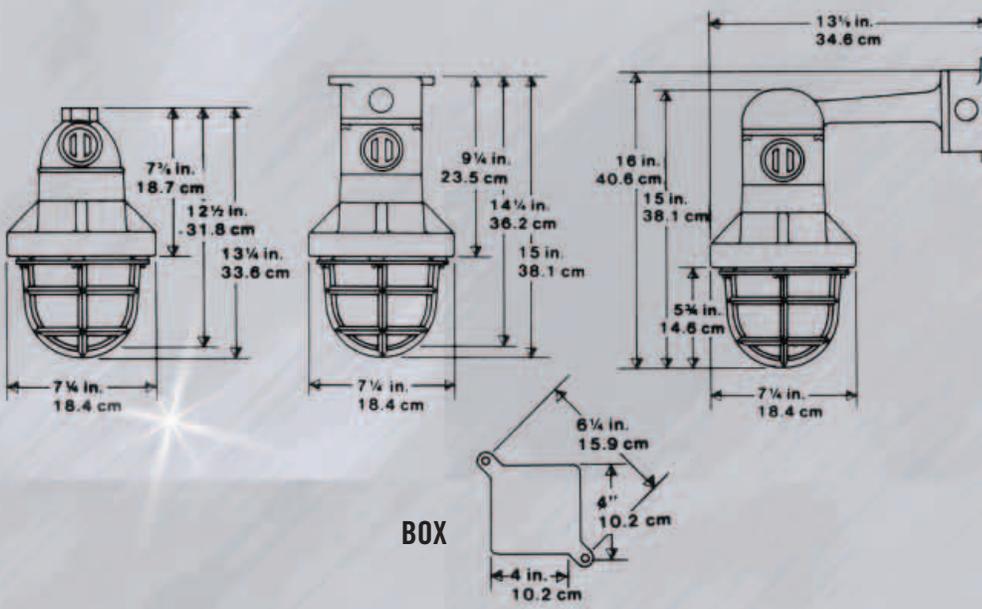
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PENDANT

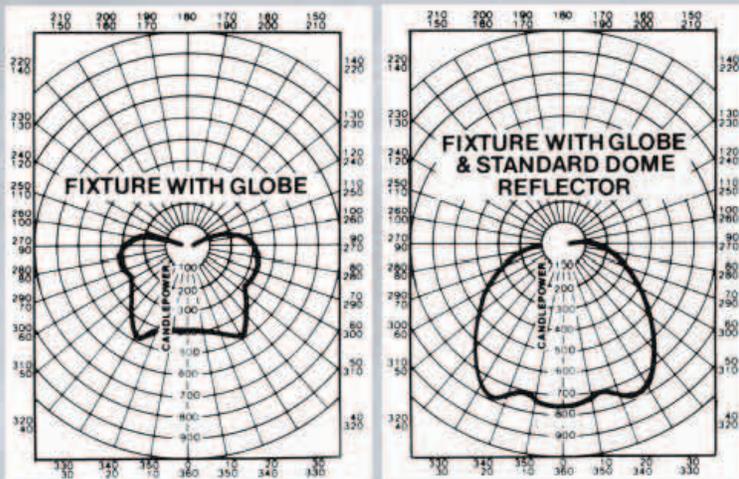
CEILING

BRACKET



FIXTURE TYPE	WEIGHT			
	With Guard	No Guard	With Guard	No Guard
	lb	kg	lb	kg
EP	12	5.4	11	5
EX	12	5.4	11	5
EB	15	6.8	14	6.4

PHOTOMETRIC DATA



Candle power values shown are for 200 watt A-23 incandescent lamp. For other lamps use multiplier.

Source	Watts	Lumens	Multiplier
INC	60W	870	.217
INC	75W	1190	.297
INC	100W	1750	.436
INC	150W	2880	.718
INC	200W	4010	1.0
INC	300W	6360	1.586

COEFFICIENT OF UTILIZATION

Fixture with Globe - 200watt A-25 incandescent

COEFFICIENT OF UTILIZATION

Fixture with Globe and Standard Dome Reflector 200watt A-25 Inc. Bulb

	80			50			10		
	50	30	10	50	30	10	50	30	10
%Ceiling Reflection	.72	.67	.63	.62	.58	.55	.50	.48	.46
%Wall Reflection	.61	.54	.48	.53	.48	.43	.43	.40	.37
Room Ratio	.53	.46	.41	.46	.41	.36	.37	.34	.31
4	.47	.39	.34	.40	.35	.30	.33	.29	.25
5	.41	.34	.29	.36	.30	.26	.29	.25	.22
6	.37	.30	.25	.32	.27	.22	.27	.23	.19
7	.33	.26	.22	.29	.23	.20	.24	.20	.17
8	.30	.23	.19	.26	.21	.17	.22	.18	.15
9	.28	.21	.17	.24	.19	.15	.20	.16	.13
10	.24	.18	.14	.22	.16	.13	.18	.14	.11

	80			50			10		
	50	30	10	50	30	10	50	30	10
%Ceiling Reflection	.71	.68	.66	.67	.65	.63	.62	.60	.59
%Wall Reflection	.63	.59	.55	.59	.56	.53	.55	.52	.51
Room Ratio	.56	.51	.47	.53	.49	.46	.49	.47	.44
4	.50	.44	.40	.47	.42	.39	.44	.41	.38
5	.44	.38	.34	.42	.37	.34	.40	.36	.33
6	.40	.34	.30	.38	.33	.30	.36	.32	.29
7	.36	.30	.27	.35	.29	.26	.33	.29	.26
8	.33	.27	.23	.31	.26	.23	.30	.26	.23
9	.30	.24	.21	.29	.24	.21	.27	.23	.20
10	.26	.21	.17	.25	.20	.17	.24	.20	.17

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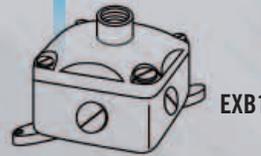
Lighting Inc.

BOXES

CSA listed Class I, Group D. 4" x 4" (20 cubic inches) cast aluminum splice boxes with heavy mounting lugs. Mating faces of box and cover surfaces milled to tolerances specified by UL Standard 886. Cover is held by four 1/4" - 20 screws and lockwashers.



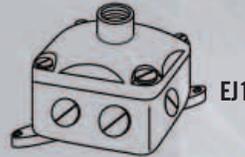
EXB



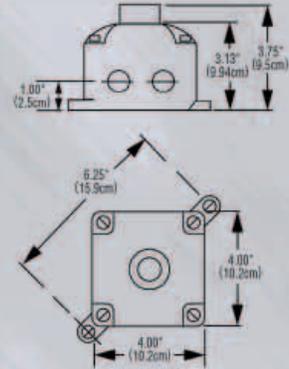
EXB1



EJ



EJ1



ACCESSORIES

GLOBES

Impact and heat resistant. 1/2" wide top flange is ground to fit machined face of globe holder casting. Top flange outside diameter 5 1/4". Overall height 6 3/8". Weight 3 1/2 pounds. Furnished clear with stippled surface for light diffusion.



a



b

GUARDS

A one piece aluminum casting held in place by four 1/4" - 20 screws into the globe holder ring.

REFLECTORS

Highly reflected white baked electrostatic polyester finish inside and out over a heavy gauge metal base. Reflector is attached to globe holder ring by four screws so that it and the guard are removed during relamping. The reflectors listed are usable with all explosion proof fixtures.



c



d

SOCKETS

Incandescent explosion proof fixtures (EB/EP/EX) use a medium base socket with glazed porcelain husk. Leads pass through 1/2" male fitter filled with sealing compound that separates the lamp chamber from the wiring compartment.

High Pressure Sodium fixtures (EHP) and Metal Halide fixtures (EMH) use a mogul base socket that is pulse rated for 4kv.

All sockets used in the explosion proof fixtures are made with heavy gauge nickel plated copper components. Nut, bolts and large area washers are used for assembly. Long #16 stranded leads are insulated with lacquered glass braid over AF.



e

CLOSE-UP PLUGS

Machined from top grade aluminum bar stock. Five full tapered threads with deep slot for tightening.



f



Cat# (1/2")	Cat# (3/4")	# Hubs	Cover
EXB	EXB-3/4	4	Blank
EXB1	EXB1-3/4	4	One 1/2" Hub
EXB2	EXB2-3/4	4	One 3/4" Hub
EJ	EJ-3/4	8	Blank
EJ1	EJ1-3/4	8	One 1/2" Hub

Cat#	Description
a	GL/EP Clear Ribbed Globe
b	GD/EP4 Aluminum Cast Guard
c	ERA200 30° Angle Dome
d	ERST200 16" Standard Dome
e	R-EXP-MED Incandescent Socket
	R-EXP-MOG High Pressure Sodium Socket
	R-EXP-MOG Metal Halide Socket
f	E-10 1/2" Close-up Plug
	E-11 3/4" Close-up Plug
	E-12 1" Close-up Plug