

Code•Master Jr.™ HID Factory Sealed Luminaires

Explosionproof, Dust-Ignitionproof

Integrally Ballasted. 50 W, 70 W, 100 W, 150 W HPS; 50 W, 70 W, 100 W, 175 W PSMH. 175 W MH EFL . Medium Base. For Use with Threaded Metal Conduit.

NEC:

Class I, Division 1 and 2, Groups B, C, D
Class II, Division 1 and 2, Groups E, F, G
Class III
Marine type electric fixtures, outside type
(salt water)

CSA: EFL

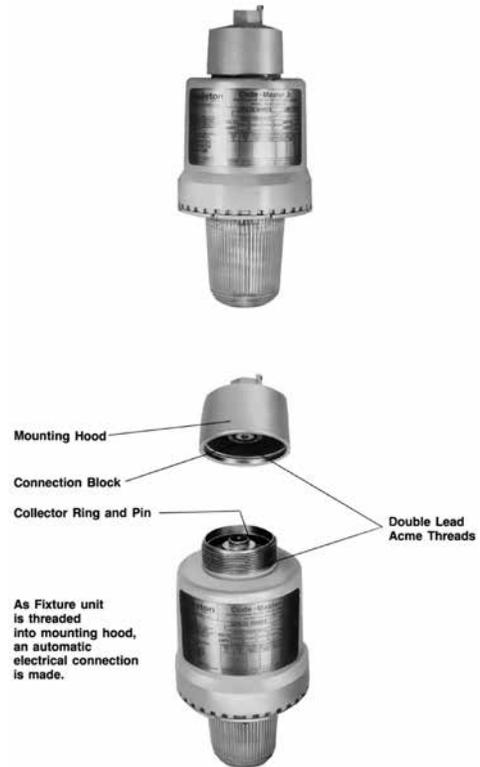
Class I, Division 1 and 2, Groups B, C, D
Class II, Division 1 and 2, Groups E, F, G
Class III
Type 4X
Exd IIB + H₂

Applications

- For use in chemical and petrochemical plants, such as manufacturers of plastics, paints and thinners; in refineries; and in other areas where ignitable vapors, dust, moisture and corrosive elements may be present.
- Suitable for outdoor saltwater locations and for other wet locations.

Features

- Fixtures operate safely in high ambient temperatures.
- Arrangement of heat-producing components results in efficient heat dissipation for cooler fixture operation.
- Patented “wireless” design. Threading of fixture unit onto mounting hood makes electrical connection. Only wiring required is attaching two wires to connection block in mounting hood.
- Connection block is easily wired: (a) loosen two screws, (b) make wire connections, and (c) re-position connection block.
- Safe, easy servicing without disconnecting any wiring.
- “Wireless” fixture unit threads off mounting hood for convenient servicing or for immediate replacement with a “stand-by” unit.
- Acme double-lead threads speed installation and fixture removal from mounting hood – only half as many turns are required as for single-lead threads. The threads do not stick or gall, eliminating problems often encountered with single-lead threads during fixture unit removal.
- All threaded joints are flame-tight.
- Integrally ballasted HID lighting fixtures; separate ballasts not required.
- Factory sealed. External seals not required for Groups C and D.
- Fixtures for use in NEC Group B locations furnished complete with UL required sealing fitting. Not required for CEC approval.
- Strategic location of lamp socket, in combination with interior prism design of the glass globe, provides optimum light distribution and control.
- Heat and impact-resistant globes have smooth dust-resistant exterior.
- Superior corrosion resistance, with epoxy powder coat finish.
- Shock-absorbing medium-base socket mounts prolong lamp life.
- Porcelain socket with nickel-plated phosphor bronze screw shell.
Assures long trouble-free operation in high ambient areas.
- Choice of mountings: pendant, ceiling, bracket and stanchion.
- Fiberglass-reinforced polyester reflectors, in standard dome, or 30° angle styles, are ideal in installations where luminaire is subject to exceptionally severe corrosive atmospheres.
- Optional guards protect globes from damage. Secured to fixture with three stainless steel screws.
- Variety of light sources: high pressure sodium, pulse start metal halide and metal halide. HPS is excellent where long lamp life is required. HPS provides high lumens per watt and is less expensive to operate. PSMH and MH are desirable where colors in illuminated areas must be close to natural.
- A wide range of ballasts and voltages are available for both domestic and export applications.
- Ballasts operate at low temperatures – PSMH/MH: -20 °F/-29 °C; HPS: -40 °F/-40 °C.
- 50 W through 150 W high pressure sodium ballasts are high reactance, high power factor type.



Standard Materials

- Ballast bodies and guards: copperfree (4/10 of 1% max.) aluminum
- Pendant mounting hoods: diecast copperfree (4/10 of 1% max.) aluminum
- Ceiling, bracket and stanchion mounting hoods: sand cast copperfree (4/10 of 1% max.) aluminum
- Reflectors: fiberglass reinforced polyester

Standard Finishes

- Ballast bodies, guards and mounting hoods: epoxy powder coat finish, electrostatically applied for complete, uniform corrosion protection

Options

- Fuses: order fuses for field installation by catalog number, see *Ballast and Fuse Kit Data*.
- “Hot Restrike” – add suffix **-R**. “Smart Starter” – add suffix **-S**. Emergency Options available for 50 W through 150 W HPS only.
- For CEC Exd IIB + H₂ rating, add suffix **-Z EFL** .
- For safety chain, add suffix **-SC**.

Certifications and Compliances

- UL Standard: UL 1598, UL 844
- UL Listed: E10444
- CSA Standard: C22.2 No. 250, C22.2 No. 137
- CSA Certified: 025428

Related Products

- For sealing fittings, see the *Fittings Section*.

EFL CSA Certification only.

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Integrally Ballasted. 50 W, 70 W, 100 W, 150 W HPS; 50 W, 70 W, 100 W, 175 W PSMH. 175 W MH [†]. Medium Base. For Use with Threaded Metal Conduit.

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Marine type electric fixtures, outside type
(salt water)

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Lamp Watts	Ballast Type †	104 °F/40 °C ❶		131 °F/55 °C ❶		149 °F/65 °C ❶		104 °F/40 °C ❷	
		Ambient Temp. "T" Numbers	Supply Wire Temp °F/°C	Ambient Temp. "T" Numbers	Supply Wire Temp °F/°C	Ambient Temp. "T" Numbers	Supply Wire Temp °F/°C	Ambient Temp. "T" Numbers	Supply Wire Temp °F/°C
High Pressure Sodium — Medium Base Lamps									
50	MT, TT	T6	167/75	T5	167/75	T4A	167/75	T4	167/75
70	MT, TT, 480 V	T5	167/75	T4A	167/75	T4A	167/75	T4	194/90
100	MT, TT, 480 V	T4A	167/75	T4	194/90	—	—	T3B	194/90
150	MT, TT, 480 V	T3C	167/75	—	—	—	—	—	—
Pulse Start Metal Halide — Medium Base Lamps									
50	MT, TT	T6	167/75	T5	167/75	T4A	194/90	T3C	194/90
70	MT, TT, 480 V	T5	167/75	T4A	167/75	T4A	194/90	T3C	194/90
100	MT, TT, 480 V	T4A	194/90	T4A	194/90	—	—	—	—
175	MT, TT, 480 V	T3B	194/90	—	—	—	—	—	—
Metal Halide — Medium Base Lamps ^{††}									
175	MT, TT, 480 V	T3B	185/85	—	—	—	—	—	—

"T" Numbers Represent the Maximum Surface Temperature for Class I, Division 1 Locations and Maximum Surface Temperature Under Dust Blanket for Class II, Division 1 Locations.

"T" Number	T1	350	325	T2	T2A	T2B	T2C	T2D	T3	T3A	T3B	T3C	T4	T4A	T5	T6
Temp. Range (°F)	664-842	619-662	574-617	538-572	502-536	448-500	421-446	394-419	358-392	331-356	322-329	277-320	250-275	214-248	187-212	185
Temp. Range (°C)	351-450	326-350	301-325	281-300	261-280	231-260	216-230	201-215	181-200	166-180	161-165	136-160	121-135	101-120	86-100	85

Fixture and Accessory Weights lbs/kgs

Fixture Size	Fixture Weight	Reflector Weight	Guard Weight
35 W thru 175 W	28-32/12.70-14.51	3/1.36	1/0.45

Mounting Hood Weights lbs/kgs

Pendant	Ceiling	Bracket	Stanchion
2/0.91	4/1.81	6/2.72	2/0.91

NOTE: The maximum operating temperature of the fixture must not exceed the ignition temperature of the gas, vapor or dust to be encountered per the National Electrical Code and the Canadian Electrical Code.

† MT is Multi-Tap for 120/208/240/277 V, TT is Tri-Tap for 120/277/347 V.

- ❶ Class I, Division 1 Locations.
- ❷ Class II, Division 1 Locations.
- †† CSA Certification only.

Code•Master Jr.™ HID Factory Sealed Luminaire Mounting Hoods and Fixture Units

Explosionproof, Dust-Ignitionproof

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Mounting Hoods

	Hub Size (Inches)	Catalog Number
Pendant — One Hub		
	3/4	CAP-75
	1 ²	CAP-100
Ceiling — Four Hubs, Three Close-Up Plugs		
	3/4	CAC-75
	1 ²	CAC-100
Bracket — Four Hubs, Three Close-Up Plugs		
	3/4	CALB-75
	1 ²	CALB-100
25° Stanchion — One Hub		
	1-1/4 or 1-1/2 ¹	CAS-150
Mounting Adapter with Connection Block		
	Permits use of existing A-51 mounting hoods (AAC Ceiling or AALB Bracket) with the new Code•Master 2 Fixture Unit. After removing existing fixture unit and adapter, screw in the new CMAD-1 Adapter. Then thread new fixture unit into the CMAD-1.	CMAD-1

Fixture Units

Ballast body with globe. Indicate voltage desired by adding voltage suffix to fixture unit catalog number listed below.

Type	Lamp Watts	Fixture Unit Number	Add Voltage Suffixes		
			120/208/240/277	120/277/347 ¹ ²	480 V
High Pressure Sodium ² High Power Factor (Min. P.F. 90%)	50	CJB50L-	MT	TTCN	—
	70	CJB70L-	MT	TTCN	48
	100	CJB100L-	MT	TTCN	48
	150	CJB150L-	MT	TTCN	48
Pulse Start Metal Halide Constant Wattage (Min. P.F. 90%)	50	CJB50H-	MT	TTCN	—
	70	CJB70H-	MT	TTCN	48
	100	CJB100H-	MT	TTCN	48
	175	CJB175P-	MT	TTCN	48
Metal Halide ¹ Constant Wattage (Min. P.F. 90%)	175	CJB175H-	MT	TT	C6

¹ 1-1/2" Tapped hub furnished with 1-1/2" to 1-1/4" reducer.

² Mounting Hoods with 1" hub listed for Class I, Group D; Class II, Groups E,F,G; and Class III only.

³ Add suffix **-R** for "Hot Restrike" and **-S** for "Smart Starter" options.

⁴ Change voltage suffix **-TTCN** to **-MTCN** for 120/208/240/277 V, **-C2** for 208 V, **-C3** for 240 V, **-C6** for 480 V, or **-C7** for 600 V, ¹

¹ CSA Certification only.

♦ Shaded area indicates items suitable for Class I, Division 1, Group B.

Code•Master Jr.™ HID Factory Sealed Luminaire Ballast and Fuse Kit Data

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 (salt water)

CSA: ^{CSA}

Class I, Division 1 and 2, Groups B, C, D
 Class II, Division 1 and 2, Groups E, F, G
 Class III
 Type 4X
 Exd IIB + H₂

Lamp	Watts	Volts	Ballast Amps				Fuse Quantity Required	Fuse Kit Catalog Number		
			High Pressure Sodium HX–H.P.F. ①		Pulse Start Metal Halide HX–H.P.F. ① — Super CWA ②			HPS	PSMH	MH ^{CSA}
			Start	Operating	Start	Operating				
50	120	120	0.58	0.58	0.87	0.60	1	CF-5	CF-3	—
	208	208	0.35	0.33	0.51	0.40	2	CF-3	CF-3	—
	240	240	0.31	0.29	0.47	0.35	2	CF-3	CF-2	—
	277	277	0.25	0.25	0.32	0.32	1	CF-2	CF-2	—
	347 ^{CSA}	347	—	—	—	—	—	—	—	—
	480	480	—	—	—	—	—	—	—	—
70	120	120	0.90	0.82	0.80	0.85	1	CF-5	CF-5	—
	208	208	0.50	0.48	0.50	0.52	2	CF-3	CF-3	—
	240	240	0.44	0.41	0.43	0.44	2	CF-3	CF-3	—
	277	277	0.35	0.36	0.39	0.39	1	CF-2	CF-2	—
	347 ^{CSA}	347	0.30	0.30	0.20	0.28	1	CF-2	CF-2	—
	480	480	0.21	0.21	0.26	0.23	2	CF-2	CF-2	—
100	120	120	1.30	1.15	1.20	1.15	1	CF-8	CF-8	—
	208	208	0.76	0.67	0.70	0.70	2	CF-5	CF-5	—
	240	240	0.66	0.58	0.61	0.58	2	CF-5	CF-3	—
	277	277	0.60	0.50	0.55	0.50	1	CF-3	CF-3	—
	347 ^{CSA}	347	0.45	0.30	0.40	0.40	1	CF-2	CF-2	—
	480	480	0.33	0.31	0.30	0.35	2	CF-3	CF-2	—
150	120	120	2.00	1.66	—	—	1	CF-10	—	—
	208	208	1.16	0.96	—	—	2	CF-5	—	—
	240	240	1.00	0.83	0.85	0.80	2	CF-5	CF-5	—
	277	277	1.00	0.83	—	—	1	CF-5	—	—
	347 ^{CSA}	347	0.52	0.56	0.55	0.65	1	CF-3	—	—
	480	480	0.88	0.75	—	—	2	CF-5	—	—
175	120	120	1.30	1.80	0.90	1.78	1	—	CF-5	CF-5
	208	208	0.75	1.04	0.50	1.08	2	—	CF-3	CF-3
	240	240	0.65	0.90	0.35	0.89	2	—	CF-3	CF-3
	277	277	0.55	0.80	0.30	0.76	1	—	CF-2	CF-2
	347 ^{CSA}	347	0.27	0.65	0.25	0.65	1	—	CF-2	CF-2
	480	480	0.35	0.45	0.25	0.50	2	—	CF-2	CF-2

Fuse Kit includes fuse, fuse holder and necessary hardware for field installation. Mounts easily in ballast body with one screw. Order one fuse for 120 V and 277

V, and 2 fuses for 208, 240 and 480 V. CF-2 = 2 Amp; CF-3 = 3 Amp; CF-5 = 5 Amp; CF-8 = 8 Amp; CF-10 = 10 Amp

① 35 W through 150 W HPS and 50 W through 100 W PSMH have H.P.F. High Reactance ballasts.

② 175 W PSMH 480 volts has CWA ballast. Multi-tap has Super CWA ballast.

^{CSA} CSA Certification only.

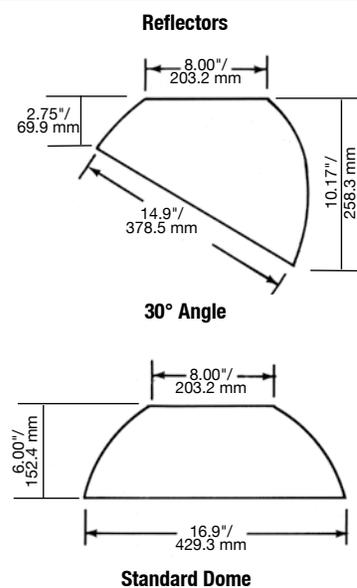
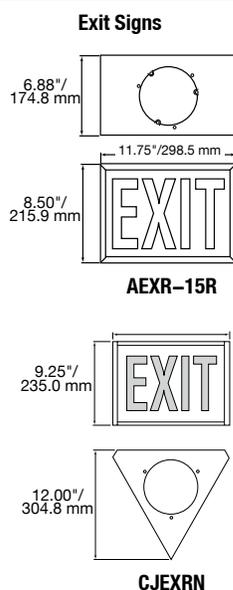
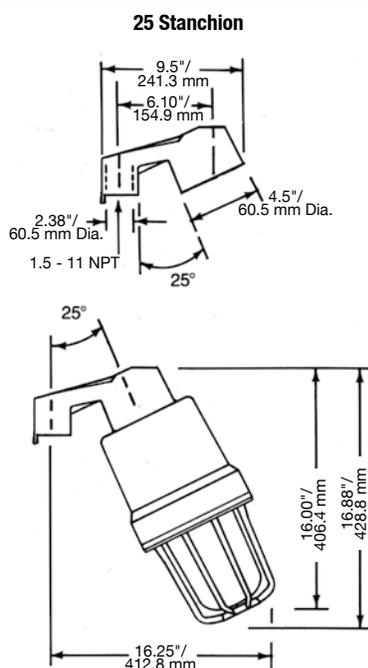
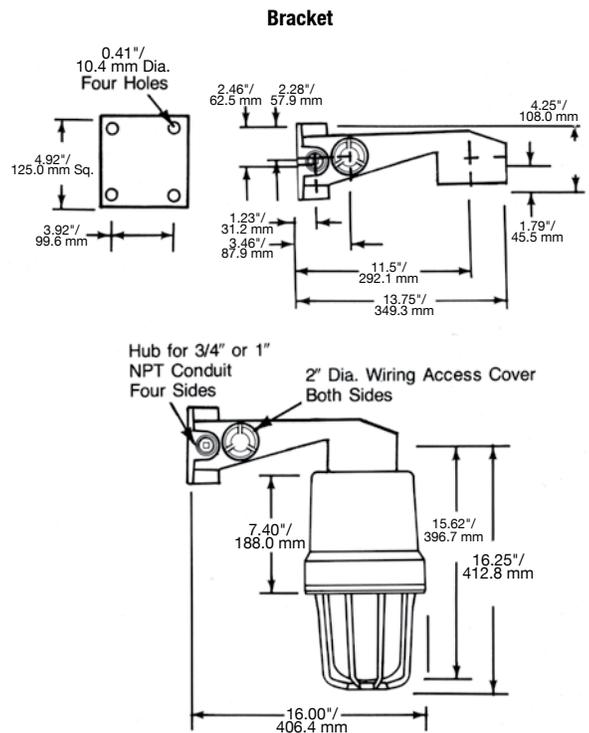
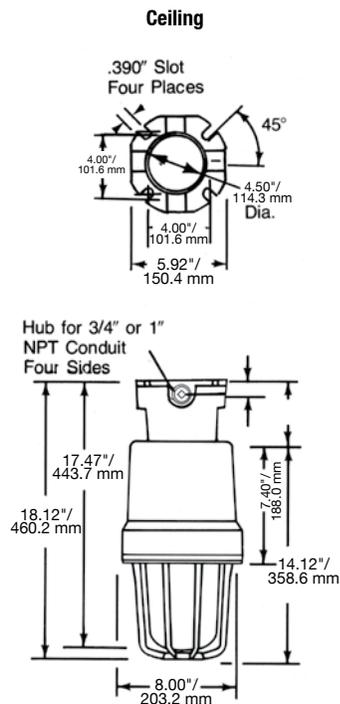
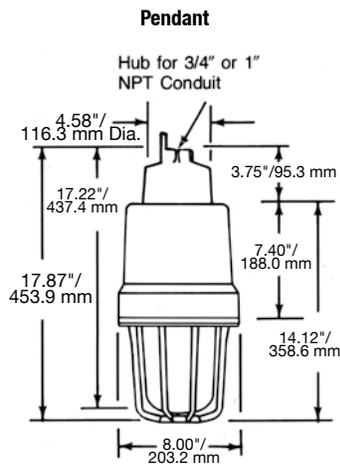
Lighting

LIGHTING: EXPLOSIONPROOF — AREA — HID

Code•Master Jr.™ HID Factory Sealed Luminaire Dimensions

Explosionproof, Dust-Ignitionproof

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Code•Master Jr.™ HID Factory Sealed Luminaire HPS Photometric Data

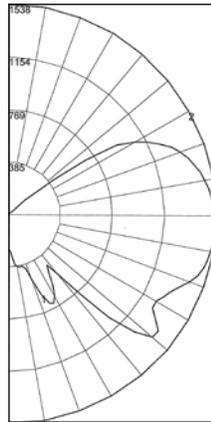
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* Photometric data is based on a fixture with a 150-watt clear High Pressure Sodium lamp (16,000 lumen), without guard. For candlepower values of fixtures with other HPS lamps, use the following multipliers:
for a 100 W (9,500 lumen) HPS lamp – 0.594; for

a 70 W (6,400 lumen) HPS lamp – 0.394;
for a 70 W (5800 lumen) HPS lamp – 0.363;
for a 50 W (4,000 lumen) HPS lamp – 0.25;
for a 35 W (2,250 lumen) HPS lamp – 0.141.
For candlepower values of fixture with guard, multiply by 0.95.

Zone	Lumens	Total Luminaire Efficiency = 77.5%			
0-10	32.97	CIE Type – General Diffuse			
10-20	119.16				
20-30	313.87				
30-40	349.57				
40-50	804.55				
50-60	1193.29				
60-70	1327.33				
70-80	1576.23				
		Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture		
80-90	1672.01	0-30	465.99	2.9	3.8
90-100	1647.69	0-40	815.56	5.1	6.6
100-110	1507.22	0-60	2813.41	17.6	22.7
110-120	1221.25	0-90	7388.98	46.2	59.6
120-130	607.81	90-120	4376.17	27.4	35.3
130-140	27.17	90-130	4983.97	31.1	40.2
140-150	1.62	90-150	5012.76	31.3	40.2
150-160	0.35	90-180	5013.20	31.3	40.4
160-170	0.07	180-0	12402.18	77.5	100.0
170-180	0.02				



REPORT NUMBER: CJL15G

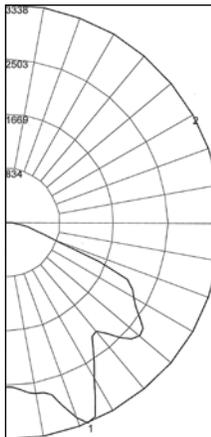
Lamps: 150 W High Pressure Sodium lamp with Globe only *

Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

% Ceiling	Rcc	80		70		50		30		10		0						
		70	50	30	10	70	50	30	10	50	30		10					
0	85	85	85	85	79	79	79	79	69	69	69	59	59	59	50	50	50	46
1	72	66	61	57	67	61	57	53	52	49	45	44	41	38	36	34	32	28
2	64	55	48	42	58	51	44	39	43	38	33	35	31	28	29	26	23	19
3	57	47	39	33	52	43	36	30	36	30	26	30	25	21	24	20	17	14
4	51	40	32	26	47	37	30	24	31	25	21	25	21	17	20	16	13	10
5	46	35	27	21	42	32	25	20	27	21	17	22	17	14	18	14	11	8
6	42	31	23	18	39	29	22	17	24	18	14	20	15	11	16	12	9	6
7	39	28	20	15	36	26	19	14	21	16	12	18	13	10	14	10	7	5
8	36	25	18	13	33	23	17	12	19	14	10	16	11	8	13	9	6	4
9	33	23	16	11	31	21	15	10	18	12	9	15	10	7	12	8	6	4
10	31	21	14	10	29	19	13	9	16	11	8	13	9	6	11	7	5	3

Zone	Lumens	Total Luminaire Efficiency = 66.9%			
0-10	249.34	CIE Type – Direct			
10-20	810.25				
20-30	1450.35				
30-40	1495.68				
40-50	1920.69				
50-60	2259.61				
60-70	1846.14				
70-80	541.69				
80-90	125.07				
		Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture		
90-100	0.70	0-30	2509.94	15.7	23.5
100-110	0.00	0-40	4005.62	25.0	37.4
110-120	0.00	0-60	8185.92	51.2	76.5
120-130	0.00	0-90	10698.82	66.9	100.0
130-140	0.00	90-120	0.70	0.0	0.0
140-150	0.00	90-130	0.70	0.0	0.0
150-160	0.00	90-150	0.70	0.0	0.0
160-170	0.00	90-180	0.70	0.0	0.0
170-180	0.00	180-0	10699.52	66.9	100.0



REPORT NUMBER: CJL15ST

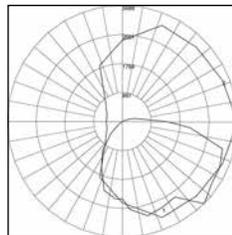
Lamps: 150 W High Pressure Sodium lamp with Standard Dome Reflector

Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

% Ceiling	Rcc	80		70		50		30		10		0						
		70	50	30	10	70	50	30	10	50	30		10					
0	80	80	80	80	78	78	78	78	74	74	74	71	71	71	68	68	68	67
1	73	69	66	64	71	68	65	63	65	63	61	62	61	59	60	59	57	56
2	66	60	55	51	64	59	54	51	56	53	49	54	51	48	52	49	47	46
3	59	52	46	42	58	51	46	41	49	44	41	47	43	40	45	42	39	38
4	54	45	39	35	52	45	39	34	43	38	34	41	37	33	40	36	33	31
5	49	40	34	29	48	39	33	29	38	33	29	37	32	28	35	31	28	27
6	45	36	30	25	44	35	29	25	34	29	25	33	28	24	32	27	24	23
7	42	32	26	22	40	32	26	22	31	25	21	30	25	21	29	24	21	20
8	39	29	23	19	38	29	23	19	28	23	19	27	22	19	26	22	19	17
9	36	27	21	17	35	26	21	17	25	20	17	25	20	17	24	20	17	15
10	34	24	19	15	33	24	19	15	23	19	15	23	18	15	22	18	15	14

Zone	Lumens	Total Luminaire Efficiency = 61.8%			
0-10	58.31	CIE Type – Direct			
10-20	482.43				
20-30	904.49				
30-40	1163.85				
40-50	1479.08				
50-60	1630.56				
60-70	1467.51				
70-80	1258.91				
80-90	1077.10				
		Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture		
90-100	153.91	0-30	1445.23	9.0	14.6
100-110	155.65	0-40	2609.08	16.3	26.4
110-120	52.23	0-60	5718.73	35.7	57.8
120-130	8.33	0-90	9522.24	59.5	96.3
130-140	0.10	90-120	361.80	2.3	3.7
140-150	0.00	90-130	370.13	2.3	3.7
150-160	0.00	90-150	370.23	2.3	3.7
160-170	0.00	90-180	370.23	2.3	3.7
170-180	0.00	180-0	9892.48	61.8	100.0



REPORT NUMBER: CJL15AN

Lamps: 150 W High Pressure Sodium lamp with 30° Angle Dome Reflector

Coefficients of Utilization – Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

% Ceiling	Rcc	80		70		50		30		10		0						
		70	50	30	10	70	50	30	10	50	30		10					
0	73	73	73	73	71	71	71	71	67	67	67	64	64	64	61	61	61	60
1	64	59	55	52	61	58	54	51	54	51	49	51	49	47	49	47	45	43
2	56	50	44	40	54	48	43	39	46	41	38	43	39	36	41	38	35	33
3	51	43	36	31	49	41	36	31	39	34	30	37	33	29	35	31	28	27
4	46	37	30	25	44	36	30	25	34	29	24	32	28	24	30	26	23	22
5	42	32	26	21	40	32	25	21	30	25	20	28	24	20	27	23	19	18
6	38	29	22	18	37	28	22	18	27	21	17	25	21	17	24	20	17	15
7	35	26	20	15	34	25	19	15	24	19	15	23	18	15	22	17	14	13
8	33	23	17	13	31	23	17	13	22	17	13	21	16	13	20	16	12	11
9	30	21	16	12	29	21	15	12	20	15	11	19	14	11	18	14	11	10
10	28	19	14	10	27	19	14	10	18	13	10	17	13	10	17	13	10	9