

# 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  $\text{EFL}$ . 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: $\text{EFL}$

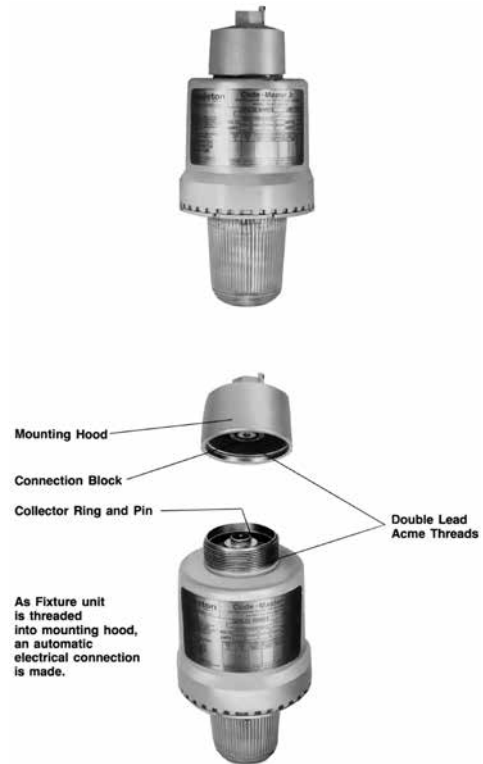
Class I, Division 1 and 2, Groups B, C, D  
Class II, Division 1 and 2, Groups E, F, G  
Class III  
Type 4X  
Exd IIB + H<sub>2</sub>

### 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 + H<sub>2</sub> rating, add suffix **-Z  $\text{EFL}$** .
- 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*.

$\text{EFL}$  CSA Certification only.

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Marine type electric fixtures, outside type  
(salt water)

### CSA: <sup>††</sup>

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Exd IIB + H<sub>2</sub>

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
<b>High Pressure Sodium — Medium Base Lamps</b>									
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	—	—	—	—	—	—
<b>Pulse Start Metal Halide — Medium Base Lamps</b>									
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	—	—	—	—	—	—
<b>Metal Halide — Medium Base Lamps <sup>††</sup></b>									
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
2/1.91	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

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

**CSA:** <sup>1</sup>

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 Type 4X  
 Exd IIB + H<sub>2</sub>

**Mounting Hoods**

	Hub Size (Inches)	Catalog Number
<b>Pendant — One Hub</b>		
	3/4	<b>CAP-75</b>
	1 ②	<b>CAP-100</b>
<b>Ceiling — Four Hubs, Three Close-Up Plugs</b>		
	3/4	<b>CAC-75</b>
	1 ②	<b>CAC-100</b>
<b>Bracket — Four Hubs, Three Close-Up Plugs</b>		
	3/4	<b>CALB-75</b>
	1 ②	<b>CALB-100</b>
<b>25° Stanchion — One Hub</b>		
	1-1/4 or 1-1/2 ①	<b>CAS-150</b>
<b>Mounting Adapter with Connection Block</b>		
	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.	<b>CMAD-1</b>

**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 <sup>1</sup> ④	480 V
<b>High Pressure Sodium</b> ③ High Power Factor (Min. P.F. 90%)	50	<b>CJB50L-</b>	<b>MT</b>	<b>TTCN</b>	—
	70	<b>CJB70L-</b>	<b>MT</b>	<b>TTCN</b>	<b>48</b>
	100	<b>CJB100L-</b>	<b>MT</b>	<b>TTCN</b>	<b>48</b>
	150	<b>CJB150L-</b>	<b>MT</b>	<b>TTCN</b>	<b>48</b>
<b>Pulse Start Metal Halide</b> Constant Wattage (Min. P.F. 90%)	50	<b>CJB50H-</b>	<b>MT</b>	<b>TTCN</b>	—
	70	<b>CJB70H-</b>	<b>MT</b>	<b>TTCN</b>	<b>48</b>
	100	<b>CJB100H-</b>	<b>MT</b>	<b>TTCN</b>	<b>48</b>
	175	<b>CJB175P-</b>	<b>MT</b>	<b>TTCN</b>	<b>48</b>
<b>Metal Halide</b> <sup>1</sup> ① Constant Wattage (Min. P.F. 90%)	175	<b>CJB175H-</b>	<b>MT</b>	<b>TT</b>	<b>C6</b>

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, <sup>1</sup>①

<sup>1</sup> CSA Certification only.

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

Lighting

LIGHTING: EXPLOSIONPROOF — AREA — HID

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

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**CSA: <sup>CSA</sup>**

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 Class III  
 Type 4X  
 Exd IIB + H<sub>2</sub>

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 <sup>CSA</sup>
			Start	Operating	Start	Operating				
50	120	0.58	0.58	0.87	0.60	1	CF-5	CF-3	—	
	208	0.35	0.33	0.51	0.40	2	CF-3	CF-3	—	
	240	0.31	0.29	0.47	0.35	2	CF-3	CF-2	—	
	277	0.25	0.25	0.32	0.32	1	CF-2	CF-2	—	
	347 <sup>CSA</sup>	—	—	—	—	—	—	—	—	
	480	—	—	—	—	—	—	—	—	
70	120	0.90	0.82	0.80	0.85	1	CF-5	CF-5	—	
	208	0.50	0.48	0.50	0.52	2	CF-3	CF-3	—	
	240	0.44	0.41	0.43	0.44	2	CF-3	CF-3	—	
	277	0.35	0.36	0.39	0.39	1	CF-2	CF-2	—	
	347 <sup>CSA</sup>	0.30	0.30	0.20	0.28	1	CF-2	CF-2	—	
	480	0.21	0.21	0.26	0.23	2	CF-2	CF-2	—	
100	120	1.30	1.15	1.20	1.15	1	CF-8	CF-8	—	
	208	0.76	0.67	0.70	0.70	2	CF-5	CF-5	—	
	240	0.66	0.58	0.61	0.58	2	CF-5	CF-3	—	
	277	0.60	0.50	0.55	0.50	1	CF-3	CF-3	—	
	347 <sup>CSA</sup>	0.45	0.30	0.40	0.40	1	CF-2	CF-2	—	
	480	0.33	0.31	0.30	0.35	2	CF-3	CF-2	—	
150	120	2.00	1.66	—	—	1	CF-10	—	—	
	208	1.16	0.96	—	—	2	CF-5	—	—	
	240	1.00	0.83	0.85	0.80	2	CF-5	CF-5	—	
	277	1.00	0.83	—	—	1	CF-5	—	—	
	347 <sup>CSA</sup>	0.52	0.56	0.55	0.65	1	CF-3	—	—	
	480	0.88	0.75	—	—	2	CF-5	—	—	
175	120	1.30	1.80	0.90	1.78	1	—	CF-5	CF-5	
	208	0.75	1.04	0.50	1.08	2	—	CF-3	CF-3	
	240	0.65	0.90	0.35	0.89	2	—	CF-3	CF-3	
	277	0.55	0.80	0.30	0.76	1	—	CF-2	CF-2	
	347 <sup>CSA</sup>	0.27	0.65	0.25	0.65	1	—	CF-2	CF-2	
	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.

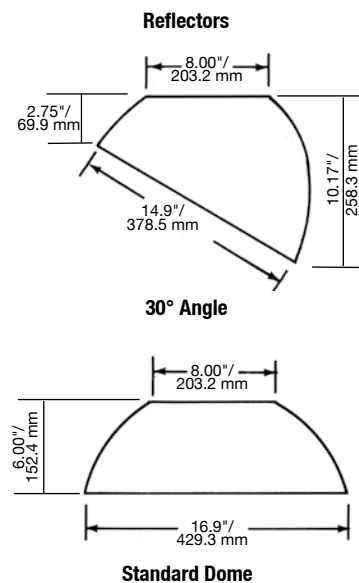
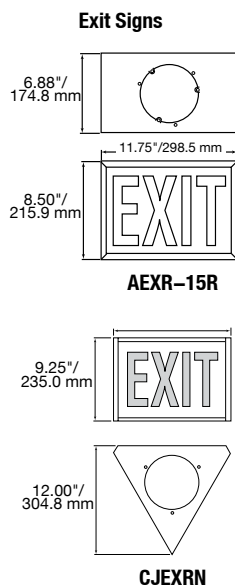
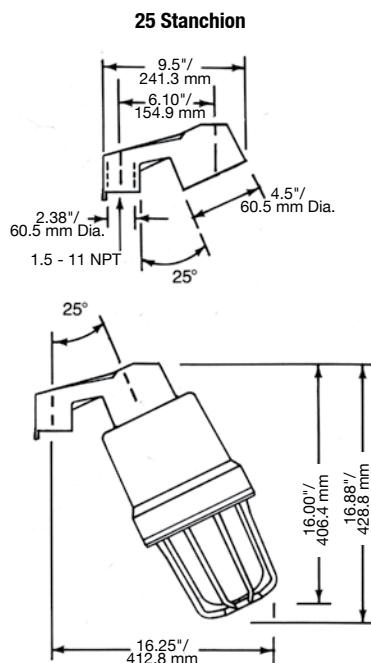
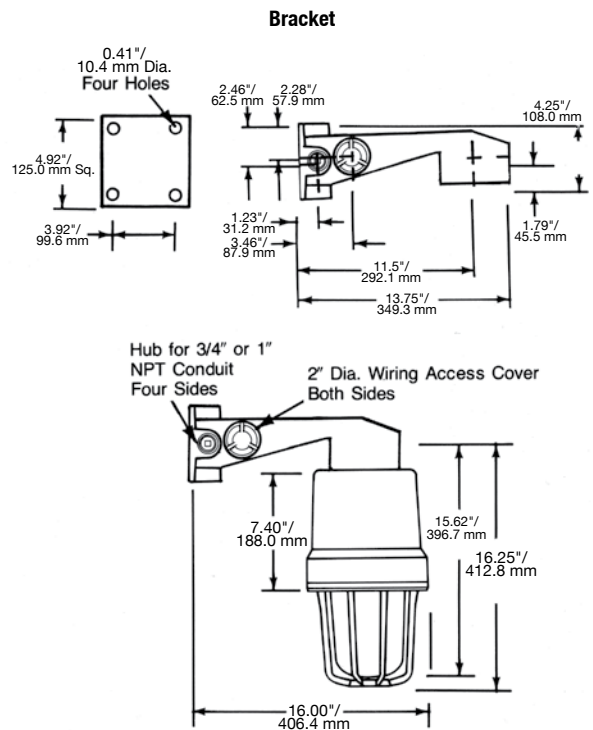
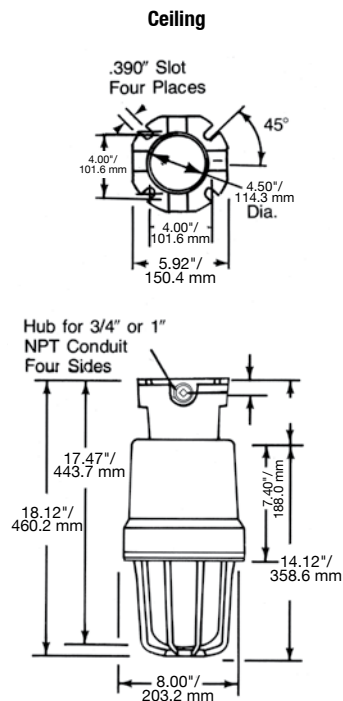
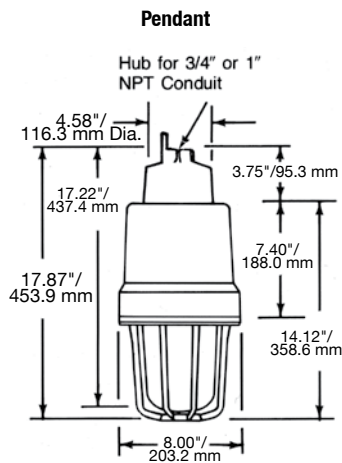
② 175 W PSMH 480 volts has CWA ballast. Multi-tap has Super CWA ballast.

<sup>CSA</sup> CSA Certification only.

# Code•Master Jr.™ HID Factory Sealed Luminaire Dimensions

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

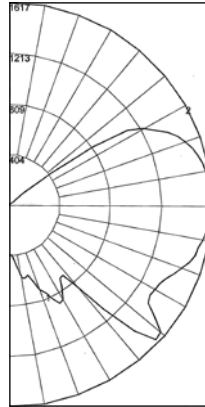
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\* Photometric data is based on a fixture with a 175-watt clear Pulse Start Metal Halide lamp (14,000 lumen), without guard. For candlepower values of fixtures with other PSMH lamps, use the following multipliers: for a 100 W (8,500 lumen) PSMH lamp – 0.607;

for a 70 W (5,000 lumen) PSMH lamp – 0.357. For candlepower values of fixture with guard, multiply by – 0.95.

Zone	Lumens	Total Luminaire Efficiency = 77.8%	
0-10	46.64	CIE Type – General Diffuse	
10-20	176.99		
20-30	380.01		
30-40	480.30		
40-50	1042.35		
50-60	1252.88		
60-70	1378.40		
70-80	1611.81		
<b>Zonal Lumen Summary</b>			
Zone	Lumens	% Lamp	% Fixture
80-90	1741.68		
90-100	1758.28	0-30	603.64 3.4 4.4
100-110	1643.71	0-40	1083.94 6.2 8.0
110-120	1371.76	0-60	3379.18 19.3 24.8
120-130	694.24	0-90	8111.07 46.3 59.6
130-140	27.13	90-120	4773.75 27.3 35.1
140-150	3.14	90-130	5467.99 31.2 40.2
150-160	0.67	90-150	5498.26 31.4 40.2
160-170	0.08	90-180	5499.05 31.4 40.4
170-180	0.03	180-0	13610.12 77.8 100.0



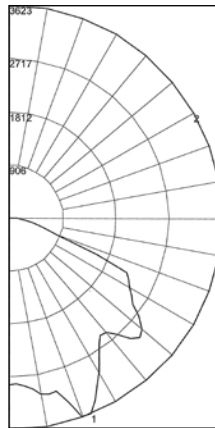
### REPORT NUMBER: CJP17G

Lamps: 175 W Pulse Start Metal Halide 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	50	30	10			
0	85	85	85	85	79	79	79	79	69	69	69	59	59	59	51	51	51	46
1	73	67	62	58	67	62	58	54	53	49	46	45	42	39	37	35	33	29
2	64	56	49	43	59	52	45	40	44	39	35	36	32	29	30	27	24	20
3	57	48	40	34	53	44	37	31	37	31	27	31	26	22	25	21	18	15
4	52	41	33	27	48	38	31	25	32	26	22	26	22	18	21	17	14	12
5	47	36	28	22	43	33	26	21	28	22	18	23	18	15	19	15	12	9
6	43	32	24	19	40	29	23	18	25	19	15	20	16	12	16	13	10	7
7	40	28	21	16	36	26	20	15	22	17	13	18	14	10	15	11	8	6
8	37	26	19	14	34	24	17	13	20	15	11	17	12	9	13	10	7	5
9	34	23	17	12	31	21	15	11	18	13	9	15	11	8	12	9	6	4
10	32	21	15	11	29	20	14	10	17	12	8	14	10	7	11	8	5	4

Zone	Lumens	Total Luminaire Efficiency = 66.4%	
0-10	281.17	CIE Type – Direct	
10-20	914.71		
20-30	1567.70		
30-40	1691.30		
40-50	2211.91		
50-60	2339.53		
60-70	1900.87		
70-80	568.93		
80-90	145.98		
90-100	1.23		
100-110	0.00		
110-120	0.00		
120-130	0.00		
130-140	0.00		
140-150	0.00		
150-160	0.00		
160-170	0.00		
170-180	0.00		
<b>Zonal Lumen Summary</b>			
Zone	Lumens	% Lamp	% Fixture
0-30	2763.57	15.8	23.8
0-40	4454.87	25.5	38.3
0-60	9006.31	51.5	77.5
0-90	11622.09	66.4	100.0
90-120	1.23	0.0	0.0
90-130	1.23	0.0	0.0
90-150	1.23	0.0	0.0
90-180	1.23	0.0	0.0
180-0	11623.32	66.4	100.0



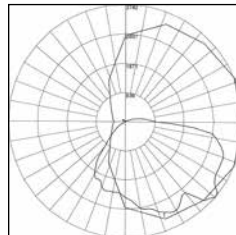
### REPORT NUMBER: CJP17ST

Lamps: 175 W Pulse Start Metal Halide 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	50	30	10			
0	79	79	79	79	77	77	77	77	74	74	74	71	71	71	68	68	68	66
1	72	69	66	64	70	67	65	63	65	63	61	62	60	59	60	58	57	56
2	65	60	55	51	64	58	54	51	56	52	49	54	51	48	52	49	47	46
3	59	52	46	42	57	51	46	41	49	44	41	47	43	40	45	42	39	38
4	54	46	39	35	52	45	39	35	43	38	34	41	37	34	40	36	33	32
5	49	40	34	29	48	40	34	29	38	33	29	37	32	29	35	31	28	27
6	45	36	30	25	44	35	29	25	34	29	25	33	28	25	32	28	24	23
7	42	32	26	22	41	32	26	22	31	26	22	30	25	22	29	25	21	20
8	39	29	23	19	38	29	23	19	28	23	19	27	22	19	26	22	19	18
9	36	27	21	17	35	26	21	17	26	21	17	25	20	17	24	20	17	16
10	34	25	19	16	33	24	19	16	24	19	15	23	18	15	22	18	15	14

Zone	Lumens	Total Luminaire Efficiency = 63.2%	
0-10	238.28	CIE Type – Direct	
10-20	739.68		
20-30	1242.92		
30-40	1491.36		
40-50	1770.34		
50-60	1739.56		
60-70	1484.79		
70-80	1197.57		
80-90	689.02		
90-100	254.20		
100-110	105.48		
110-120	35.72		
120-130	41.95		
130-140	8.72		
140-150	6.06		
150-160	4.53		
160-170	2.20		
170-180	0.68		
<b>Zonal Lumen Summary</b>			
Zone	Lumens	% Lamp	% Fixture
0-30	2220.87	12.7	20.1
0-40	3712.23	21.2	33.6
0-60	7222.13	41.3	65.3
0-90	10593.52	60.5	95.8
90-120	395.41	2.3	3.6
90-130	437.36	2.5	4.0
90-150	452.13	2.6	4.0
90-180	459.54	2.6	4.2
180-0	11053.05	63.2	100.0



### REPORT NUMBER: CJP17AN

Lamps: 175 W Pulse Start Metal Halide 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	50	30	10			
0	75	75	75	75	73	73	73	73	69	69	69	65	65	65	62	62	62	61
1	66	63	59	56	64	61	58	55	58	55	53	55	53	51	52	50	49	47
2	60	53	48	44	58	52	47	43	49	45	42	47	43	41	44	42	39	38
3	54	46	40	36	52	45	40	35	43	38	34	41	37	33	39	35	32	31
4	49	41	34	30	47	39	34	29	38	33	29	36	31	28	34	30	27	26
5	45	36	30	25	43	35	29	25	33	28	24	32	27	24	30	26	23	22
6	41	32	26	22	40	31	26	21	30	25	21	29	24	21	27	23	20	19
7	38	29	23	19	37	28	23	19	27	22	18	26	21	18	25	21	18	16
8	35	26	21	17	34	26	20	17	25	20	16	24	19	16	23	19	16	14
9	33	24	19	15	32	24	18	15	23	18	15	22	17	14	21	17	14	13
10	31	22	17	13	30	22	17	13	21	16	13	20	16	13	19	15	13	12