

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P243367

Luminaire Tested: S123DRP-H775D840-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243367  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-54)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DRP-H775D840-X4F0-XX-UDD-D-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

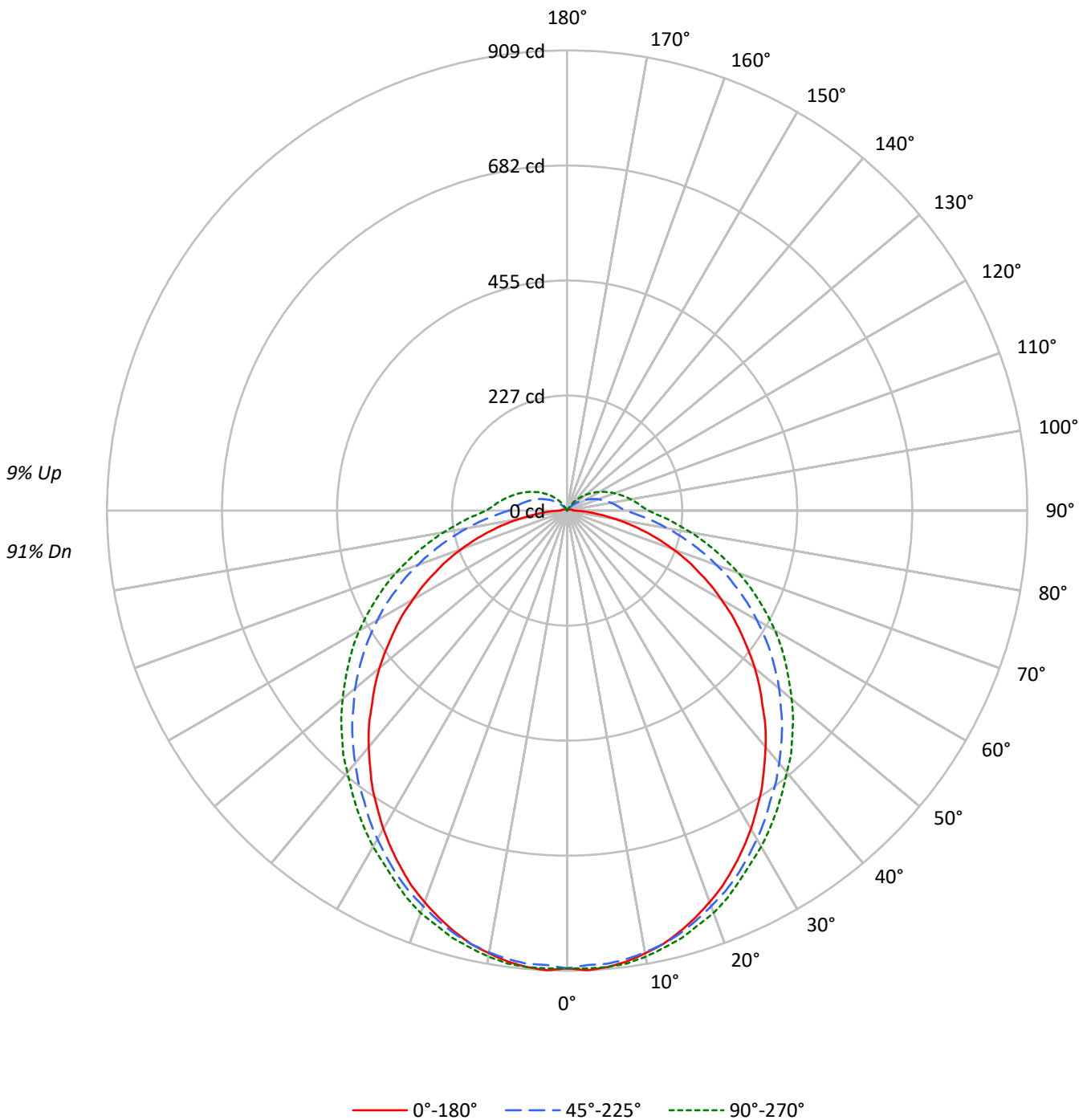
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3069.0 lumens  
Efficiency: N/A  
Efficacy: 130.0 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')  
CIE Type: Direct  
  
Input Watts (W): 23.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	117	117	117	117	113	113	113	113	106	106	106	100	100	100	94	94	94	91
1	105	100	95	90	101	96	92	88	91	87	84	85	82	80	80	78	76	73
2	95	86	79	72	91	83	77	71	78	73	68	74	69	65	69	66	62	60
3	86	75	66	60	83	73	65	58	69	62	56	65	59	54	61	56	52	50
4	79	66	57	50	76	64	56	49	61	53	48	57	51	46	54	49	45	42
5	72	59	50	43	70	57	49	42	54	47	41	51	45	40	49	43	39	36
6	67	53	44	37	64	52	43	37	49	41	36	46	40	35	44	38	34	31
7	62	48	39	33	60	47	38	32	44	37	32	42	36	31	40	34	30	28
8	57	44	35	29	55	43	34	29	41	33	28	39	32	27	37	31	27	25
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	28	24	22
10	50	37	29	24	49	36	29	23	35	28	23	33	27	22	32	26	22	20

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10960	10960	10960
5°	10993	10679	10674
10°	10891	10409	10350
15°	10741	10112	9995
20°	10535	9760	9635
25°	10301	9433	9219
30°	10037	9066	8868
35°	9773	8694	8519
40°	9481	8391	8185
45°	9161	8092	7906
50°	8893	7786	7616
55°	8564	7474	7332
60°	8220	7129	7055
65°	7858	6761	6717
70°	7446	6365	6386
75°	6828	5934	5995
80°	6041	5509	5653
85°	5370	5164	5392

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9161 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	85.8	2.8
10°-20°	244.8	8.0
20°-30°	366.6	11.9
30°-40°	438.6	14.3
40°-50°	459.9	15.0
50°-60°	432.4	14.1
60°-70°	361.9	11.8
70°-80°	259.7	8.5
80°-90°	155.5	5.1
90°-100°	98.6	3.2
100°-110°	72.7	2.4
110°-120°	48.6	1.6
120°-130°	28.1	0.9
130°-140°	12.9	0.4
140°-150°	3.0	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	697.2	22.7
0°-40°	1135.8	37.0
0°-60°	2028.1	66.1
0°-90°	2805.1	91.4
90°-120°	219.9	7.2
90°-150°	263.9	8.6
90°-180°	264.0	8.6
0°-180°	3069.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	904	904	904	904	904	
5°	905	904	899	906	905	86
15°	861	866	865	876	874	243
25°	778	788	795	807	806	358
35°	670	686	700	718	722	419
45°	546	573	601	621	629	422
55°	418	453	491	518	527	374
65°	287	329	373	406	417	285
75°	158	206	256	290	302	167
85°	48	98	153	188	200	49
90°	13	62	115	150	160	9
95°	10	51	100	132	142	9
105°	8	33	76	105	113	8
115°	5	17	54	78	87	5
125°	4	4	33	54	61	3
135°	2	1	14	31	37	1
145°	1	0	0	9	13	1
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	904.2	904.2	904.2	904.2	904.2
2.5°	908.9	906.1	898.6	907.1	905.2
5°	905.2	904.2	898.6	906.1	905.2
7.5°	898.6	898.6	893.9	902.3	902.3
10°	888.2	891.0	886.3	895.7	894.8
12.5°	876.9	880.7	876.9	887.3	884.4
15°	860.9	866.5	864.6	875.9	874.1
17.5°	842.9	849.5	848.6	859.9	859.0
20°	823.1	831.6	831.6	842.9	845.8
22.5°	802.4	811.8	814.7	826.0	827.9
25°	777.9	788.3	794.9	807.1	806.2
27.5°	752.4	764.7	772.2	785.4	785.4
30°	726.0	740.2	749.6	763.7	766.6
32.5°	697.7	714.7	726.0	741.1	744.9
35°	670.4	686.4	699.6	717.5	722.3
37.5°	639.3	659.1	677.0	695.9	698.7
40°	610.0	631.7	651.5	671.3	675.1
42.5°	579.9	602.5	626.1	645.9	654.4
45°	545.9	573.3	600.6	621.4	628.9
47.5°	515.8	543.1	572.3	596.8	605.3
50°	483.7	512.0	546.9	570.4	578.9
52.5°	450.7	481.8	518.6	544.0	552.5
55°	417.7	452.6	491.2	517.6	527.1
57.5°	386.6	421.5	462.0	491.2	501.6
60°	351.7	390.4	432.8	463.0	474.3
62.5°	320.6	360.2	404.5	434.7	446.0
65°	286.6	329.1	373.4	406.4	416.8
67.5°	255.5	297.0	345.1	378.1	389.4
70°	222.5	265.9	314.0	347.9	360.2
72.5°	189.5	235.7	284.8	319.6	330.0
75°	157.5	205.5	255.5	290.4	301.7
77.5°	127.3	175.4	227.2	262.1	274.4
80°	97.1	147.1	200.8	235.7	248.0
82.5°	70.7	121.6	176.3	210.3	221.6
85°	48.1	98.1	152.7	187.6	199.9
87.5°	28.3	79.2	132.0	166.9	177.3
90°	13.2	62.2	115.0	149.9	160.3
92.5°	12.3	55.6	106.5	139.5	149.9
95°	10.4	50.9	99.9	132.0	142.4
97.5°	10.4	46.2	94.3	125.4	134.8
100°	9.4	41.5	88.6	117.9	127.3
102.5°	8.5	36.8	82.0	111.3	120.7
105°	7.5	33.0	76.4	104.7	113.1
107.5°	6.6	28.3	70.7	98.1	106.5
110°	6.6	24.5	65.1	91.5	99.9



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	5.7	20.7	59.4	84.9	93.3
115°	4.7	17.0	53.7	78.3	86.7
117.5°	4.7	13.2	48.1	72.6	80.1
120°	4.7	10.4	43.4	66.0	73.5
122.5°	3.8	6.6	38.7	60.3	67.9
125°	3.8	3.8	33.0	53.7	61.3
127.5°	2.8	1.9	28.3	48.1	54.7
130°	2.8	1.9	23.6	42.4	49.0
132.5°	1.9	1.9	18.9	36.8	43.4
135°	1.9	0.9	14.1	31.1	36.8
137.5°	1.9	0.9	9.4	25.5	31.1
140°	0.9	0.9	4.7	19.8	25.5
142.5°	0.9	0.0	0.9	15.1	19.8
145°	0.9	0.0	0.0	9.4	13.2
147.5°	0.9	0.0	0.0	4.7	8.5
150°	0.9	0.0	0.0	0.0	2.8
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0



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**CIE UGR TABLE:**

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	17.35	18.86	17.85	19.34	19.86	19.42	20.92	19.91	21.41	21.93
	3H	18.91	20.28	19.41	20.77	21.33	21.82	23.19	22.32	23.68	24.24
	4H	19.43	20.73	19.96	21.24	21.82	22.93	24.23	23.46	24.74	25.32
	6H	19.77	20.98	20.31	21.50	22.10	24.06	25.27	24.60	25.79	26.38
	8H	19.86	21.02	20.41	21.56	22.16	24.62	25.78	25.17	26.33	26.92
	12H	19.91	21.02	20.46	21.56	22.18	25.24	26.35	25.80	26.89	27.52
4H	2H	18.27	19.57	18.80	20.08	20.65	19.87	21.17	20.40	21.68	22.26
	3H	20.07	21.18	20.61	21.73	22.33	22.48	23.59	23.02	24.14	24.74
	4H	20.74	21.75	21.30	22.31	22.94	23.76	24.77	24.32	25.33	25.96
	6H	21.21	22.10	21.79	22.69	23.33	25.06	25.95	25.64	26.54	27.18
	8H	21.35	22.19	21.93	22.77	23.43	25.72	26.56	26.30	27.15	27.80
	12H	21.43	22.19	22.04	22.81	23.47	26.45	27.21	27.05	27.83	28.49
8H	4H	21.39	22.22	21.97	22.81	23.47	23.98	24.82	24.56	25.41	26.06
	6H	22.04	22.75	22.66	23.38	24.04	25.44	26.15	26.06	26.78	27.44
	8H	22.27	22.91	22.90	23.55	24.23	26.23	26.87	26.85	27.51	28.18
	12H	22.44	23.02	23.07	23.64	24.38	27.12	27.69	27.75	28.32	29.06
12H	4H	21.54	22.31	22.15	22.92	23.58	23.99	24.75	24.60	25.37	26.03
	6H	22.29	22.93	22.92	23.57	24.24	25.48	26.12	26.11	26.76	27.44
	8H	22.61	23.19	23.24	23.81	24.55	26.33	26.90	26.96	27.53	28.27