

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: P243354

Luminaire Tested: S123DRP-H1000D927-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243354  
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-H1000D927-X4F0-XX-UDD-D-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: -

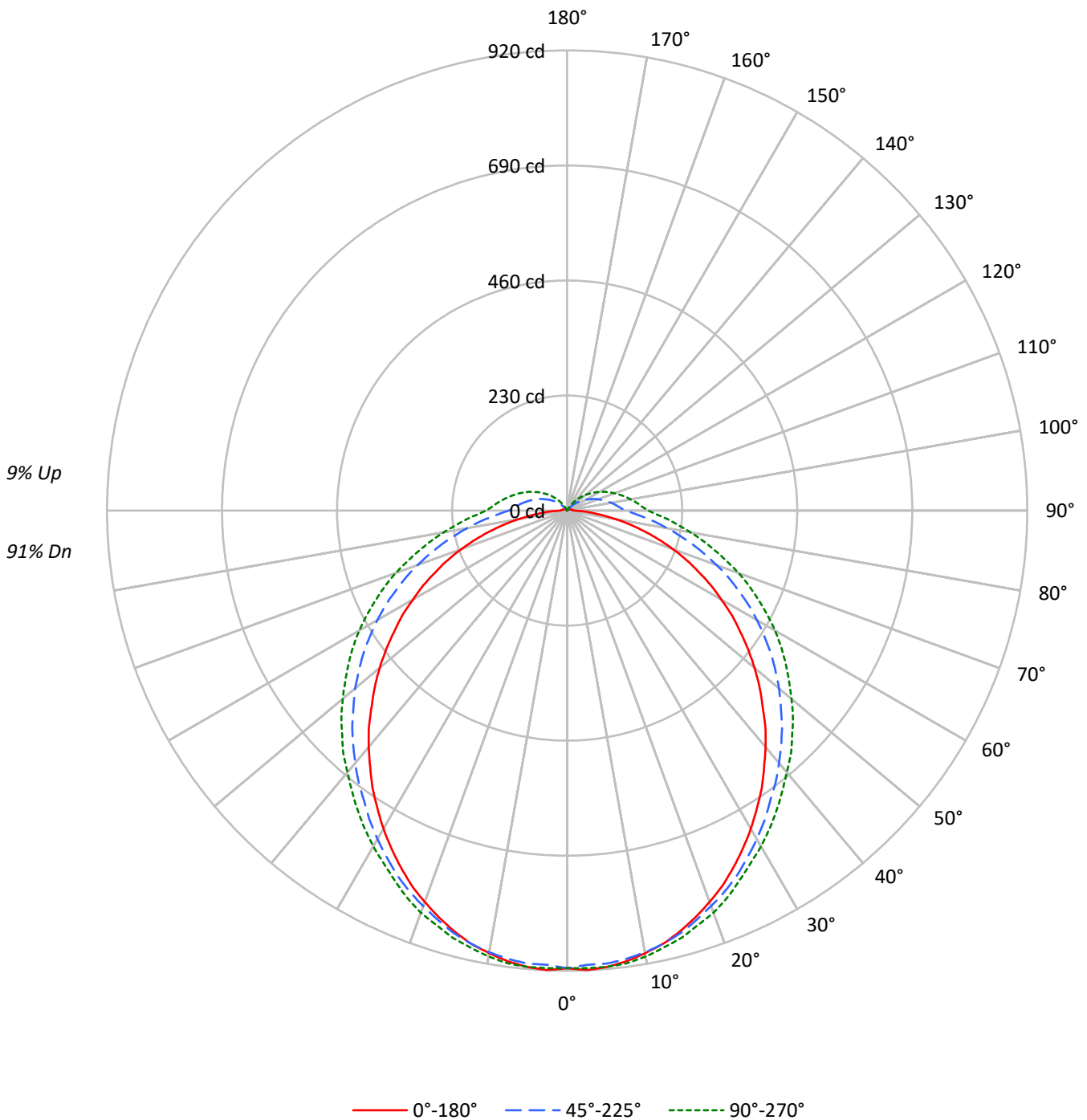
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3104.8 lumens  
Efficiency: N/A  
Efficacy: 98.6 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): 31.5  
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°	11088	11088	11088
5°	11121	10803	10798
10°	11017	10530	10470
15°	10866	10230	10111
20°	10658	9873	9747
25°	10420	9542	9327
30°	10154	9171	8971
35°	9887	8796	8618
40°	9593	8489	8281
45°	9268	8186	7998
50°	8996	7876	7706
55°	8665	7562	7417
60°	8316	7212	7137
65°	7951	6839	6794
70°	7533	6438	6460
75°	6906	6004	6064
80°	6110	5575	5719
85°	5425	5225	5454

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9268 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	86.8	2.8
10°-20°	247.6	8.0
20°-30°	370.8	11.9
30°-40°	443.7	14.3
40°-50°	465.3	15.0
50°-60°	437.4	14.1
60°-70°	366.1	11.8
70°-80°	262.7	8.5
80°-90°	157.4	5.1
90°-100°	99.8	3.2
100°-110°	73.5	2.4
110°-120°	49.2	1.6
120°-130°	28.4	0.9
130°-140°	13.1	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°	705.3	22.7
0°-40°	1149.0	37.0
0°-60°	2051.7	66.1
0°-90°	2837.8	91.4
90°-120°	222.5	7.2
90°-150°	267.0	8.6
90°-180°	267.0	8.6
0°-180°	3104.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	915	915	915	915	915	
5°	916	915	909	917	916	87
15°	871	877	875	886	884	245
25°	787	797	804	816	816	362
35°	678	694	708	726	731	424
45°	552	580	608	629	636	427
55°	423	458	497	524	533	378
65°	290	333	378	411	422	288
75°	159	208	258	294	305	169
85°	49	99	154	190	202	50
90°	13	63	116	152	162	9
95°	10	52	101	134	144	9
105°	8	33	77	106	114	8
115°	5	17	54	79	88	5
125°	4	4	33	54	62	3
135°	2	1	14	32	37	1
145°	1	0	0	10	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°	914.8	914.8	914.8	914.8	914.8
2.5°	919.5	916.7	909.0	917.6	915.7
5°	915.7	914.8	909.0	916.7	915.7
7.5°	909.0	909.0	904.3	912.8	912.8
10°	898.5	901.4	896.6	906.2	905.2
12.5°	887.1	890.9	887.1	897.6	894.7
15°	870.9	876.6	874.7	886.1	884.2
17.5°	852.8	859.4	858.5	869.9	869.0
20°	832.7	841.3	841.3	852.8	855.6
22.5°	811.7	821.3	824.1	835.6	837.5
25°	786.9	797.4	804.1	816.5	815.6
27.5°	761.2	773.6	781.2	794.6	794.6
30°	734.5	748.8	758.3	772.6	775.5
32.5°	705.9	723.0	734.5	749.7	753.6
35°	678.2	694.4	707.8	725.9	730.7
37.5°	646.7	666.8	684.9	704.0	706.8
40°	617.2	639.1	659.1	679.2	683.0
42.5°	586.6	609.5	633.4	653.4	662.0
45°	552.3	579.9	607.6	628.6	636.2
47.5°	521.8	549.4	579.0	603.8	612.4
50°	489.3	517.9	553.2	577.1	585.7
52.5°	455.9	487.4	524.6	550.4	559.0
55°	422.6	457.9	497.0	523.7	533.2
57.5°	391.1	426.4	467.4	497.0	507.5
60°	355.8	394.9	437.8	468.3	479.8
62.5°	324.3	364.4	409.2	439.7	451.2
65°	290.0	332.9	377.7	411.1	421.6
67.5°	258.5	300.5	349.1	382.5	393.9
70°	225.1	269.0	317.6	352.0	364.4
72.5°	191.7	238.5	288.1	323.4	333.9
75°	159.3	207.9	258.5	293.8	305.2
77.5°	128.8	177.4	229.9	265.2	277.6
80°	98.2	148.8	203.2	238.5	250.9
82.5°	71.5	123.0	178.4	212.7	224.2
85°	48.6	99.2	154.5	189.8	202.2
87.5°	28.6	80.1	133.5	168.8	179.3
90°	13.4	63.0	116.4	151.7	162.2
92.5°	12.4	56.3	107.8	141.2	151.7
95°	10.5	51.5	101.1	133.5	144.0
97.5°	10.5	46.7	95.4	126.9	136.4
100°	9.5	42.0	89.7	119.2	128.8
102.5°	8.6	37.2	83.0	112.6	122.1
105°	7.6	33.4	77.3	105.9	114.5
107.5°	6.7	28.6	71.5	99.2	107.8
110°	6.7	24.8	65.8	92.5	101.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	5.7	21.0	60.1	85.8	94.4
115°	4.8	17.2	54.4	79.2	87.8
117.5°	4.8	13.4	48.6	73.4	81.1
120°	4.8	10.5	43.9	66.8	74.4
122.5°	3.8	6.7	39.1	61.0	68.7
125°	3.8	3.8	33.4	54.4	62.0
127.5°	2.9	1.9	28.6	48.6	55.3
130°	2.9	1.9	23.8	42.9	49.6
132.5°	1.9	1.9	19.1	37.2	43.9
135°	1.9	1.0	14.3	31.5	37.2
137.5°	1.9	1.0	9.5	25.8	31.5
140°	1.0	1.0	4.8	20.0	25.8
142.5°	1.0	0.0	1.0	15.3	20.0
145°	1.0	0.0	0.0	9.5	13.4
147.5°	1.0	0.0	0.0	4.8	8.6
150°	1.0	0.0	0.0	0.0	2.9
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	17.39	18.90	17.89	19.38	19.90	19.46	20.96	19.96	21.45	21.97
	3H	18.95	20.32	19.45	20.81	21.37	21.86	23.23	22.36	23.72	24.28
	4H	19.47	20.77	20.00	21.28	21.86	22.97	24.27	23.50	24.78	25.36
	6H	19.81	21.02	20.35	21.54	22.14	24.10	25.31	24.64	25.83	26.42
	8H	19.90	21.06	20.45	21.60	22.20	24.66	25.82	25.21	26.37	26.96
	12H	19.95	21.06	20.50	21.60	22.22	25.28	26.39	25.84	26.93	27.56
4H	2H	18.31	19.61	18.84	20.12	20.69	19.91	21.21	20.44	21.72	22.30
	3H	20.11	21.22	20.65	21.77	22.37	22.52	23.63	23.06	24.18	24.78
	4H	20.78	21.79	21.34	22.35	22.98	23.80	24.81	24.36	25.37	26.00
	6H	21.25	22.14	21.83	22.73	23.37	25.10	25.99	25.68	26.58	27.22
	8H	21.39	22.23	21.97	22.81	23.47	25.76	26.60	26.34	27.19	27.84
	12H	21.47	22.23	22.08	22.85	23.51	26.49	27.25	27.09	27.87	28.53
8H	4H	21.43	22.27	22.01	22.85	23.51	24.02	24.86	24.61	25.45	26.10
	6H	22.08	22.79	22.70	23.42	24.08	25.48	26.19	26.10	26.82	27.48
	8H	22.31	22.95	22.94	23.59	24.27	26.27	26.91	26.89	27.55	28.22
	12H	22.48	23.06	23.11	23.68	24.42	27.16	27.73	27.79	28.36	29.10
12H	4H	21.58	22.35	22.19	22.96	23.62	24.03	24.79	24.64	25.41	26.07
	6H	22.33	22.97	22.96	23.61	24.28	25.52	26.16	26.15	26.80	27.48
	8H	22.65	23.23	23.28	23.85	24.59	26.37	26.95	27.00	27.57	28.31