

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: P242523

Luminaire Tested: S123DRP-S1000D940-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242523  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-15)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DRP-S1000D940-X4F0-XX-UDD-D-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN DROP DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

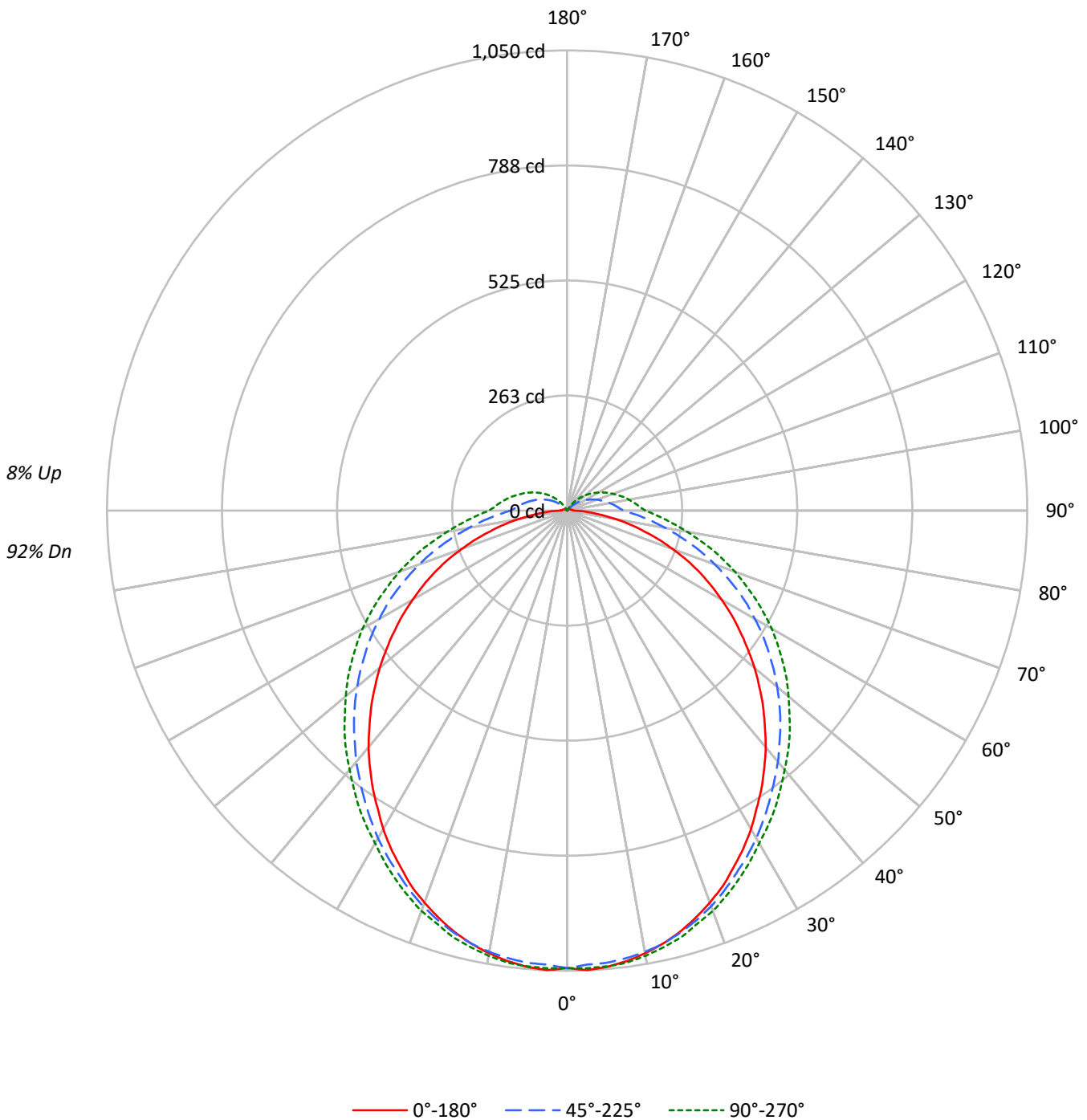
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3508.3 lumens  
Efficiency: N/A  
Efficacy: 100.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.23' x L: 3.88' x H: 0.08')  
CIE Type: Direct  
  
Input Watts (W): 34.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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	92
1	105	100	95	90	102	97	92	88	91	87	84	85	82	80	80	78	76	73
2	95	86	79	72	92	83	77	71	79	73	68	74	69	65	70	66	63	60
3	86	75	67	60	83	73	65	59	69	62	56	65	59	54	61	56	52	50
4	79	66	57	50	76	64	56	49	61	54	48	57	51	46	54	49	45	42
5	72	59	50	43	70	58	49	42	54	47	41	52	45	40	49	43	39	36
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	44	38	34	32
7	62	48	39	33	60	47	38	32	45	37	32	42	36	31	40	35	30	28
8	58	44	35	29	56	43	35	29	41	33	28	39	32	28	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	24	35	28	23	33	27	23	32	26	22	20

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

	0°	45°	90°
0°	12653	12653	12653
5°	12691	12311	12310
10°	12577	12006	11930
15°	12415	11664	11520
20°	12182	11277	11076
25°	11895	10836	10611
30°	11602	10439	10142
35°	11273	10019	9763
40°	10958	9637	9361
45°	10611	9269	9035
50°	10265	8904	8676
55°	9887	8530	8351
60°	9515	8149	8017
65°	9135	7742	7624
70°	8563	7284	7217
75°	7838	6761	6801
80°	7005	6238	6326
85°	6218	5843	6012

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 10611 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	99.0	2.8
10°-20°	282.3	8.0
20°-30°	422.1	12.0
30°-40°	504.0	14.4
40°-50°	527.4	15.0
50°-60°	494.9	14.1
60°-70°	413.4	11.8
70°-80°	295.6	8.4
80°-90°	175.9	5.0
90°-100°	110.5	3.2
100°-110°	81.2	2.3
110°-120°	54.2	1.5
120°-130°	31.0	0.9
130°-140°	13.9	0.4
140°-150°	2.9	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	803.5	22.9
0°-40°	1307.5	37.3
0°-60°	2329.8	66.4
0°-90°	3214.6	91.6
90°-120°	246.0	7.0
90°-150°	293.7	8.4
90°-180°	294.0	8.4
0°-180°	3508.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1044	1044	1044	1044	1044	
5°	1045	1043	1036	1045	1044	99
15°	995	998	997	1009	1008	280
25°	898	910	913	928	928	414
35°	773	792	806	823	828	484
45°	632	660	688	710	719	488
55°	482	520	561	591	600	432
65°	333	378	428	462	473	329
75°	181	234	291	329	342	193
85°	56	113	173	212	223	57
90°	15	70	128	167	178	11
95°	12	57	113	148	159	10
105°	9	36	85	117	127	9
115°	6	19	60	88	97	6
125°	3	3	36	60	68	3
135°	2	1	14	34	40	2
145°	1	0	0	9	14	0
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°	1043.9	1043.9	1043.9	1043.9	1043.9
2.5°	1049.6	1046.2	1037.1	1046.2	1045.0
5°	1045.0	1042.8	1035.9	1045.0	1043.9
7.5°	1037.1	1037.1	1030.3	1041.6	1040.5
10°	1025.7	1028.0	1022.3	1033.7	1031.4
12.5°	1012.1	1015.5	1012.1	1022.3	1020.0
15°	995.0	998.4	997.3	1008.7	1007.5
17.5°	974.5	981.4	980.2	990.5	988.2
20°	951.8	958.6	960.9	971.1	972.3
22.5°	927.9	934.7	938.1	951.8	950.7
25°	898.3	909.7	913.1	927.9	927.9
27.5°	869.9	882.4	889.3	901.8	902.9
30°	839.2	854.0	863.1	876.7	876.7
32.5°	805.1	822.2	834.7	849.5	852.9
35°	773.3	791.5	806.2	823.3	827.8
37.5°	739.1	759.6	776.7	796.0	799.4
40°	705.0	725.5	748.2	767.6	772.1
42.5°	667.5	693.7	717.5	739.1	746.0
45°	632.3	659.5	688.0	709.6	718.7
47.5°	594.7	625.4	657.3	681.2	688.0
50°	558.3	590.2	625.4	651.6	659.5
52.5°	519.7	553.8	593.6	620.9	631.1
55°	482.2	519.7	560.6	591.3	600.4
57.5°	445.8	484.4	528.8	559.5	569.7
60°	407.1	448.0	494.7	526.5	539.0
62.5°	370.7	412.8	462.8	494.7	506.0
65°	333.2	377.5	427.6	461.7	473.1
67.5°	295.7	342.3	392.3	429.8	438.9
70°	255.9	304.8	359.3	395.7	407.1
72.5°	219.5	268.4	325.2	362.8	374.1
75°	180.8	234.3	291.1	328.6	342.3
77.5°	147.8	201.3	258.1	297.9	308.2
80°	112.6	168.3	227.4	266.1	277.5
82.5°	81.9	138.7	199.0	237.7	249.0
85°	55.7	112.6	172.8	211.5	222.9
87.5°	34.1	91.0	149.0	187.6	199.0
90°	14.8	70.5	128.5	167.2	178.5
92.5°	13.6	62.5	119.4	156.9	167.2
95°	12.5	56.9	112.6	147.8	159.2
97.5°	11.4	52.3	105.8	139.9	151.2
100°	10.2	46.6	98.9	131.9	143.3
102.5°	9.1	40.9	92.1	123.9	135.3
105°	9.1	36.4	85.3	117.1	127.4
107.5°	8.0	31.8	78.5	109.2	119.4
110°	6.8	27.3	72.8	102.3	111.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	6.8	22.7	66.0	94.4	104.6
115°	5.7	19.3	60.3	87.6	96.7
117.5°	5.7	14.8	53.4	80.7	89.8
120°	4.5	10.2	47.8	73.9	81.9
122.5°	4.5	6.8	42.1	67.1	75.1
125°	3.4	3.4	36.4	60.3	68.2
127.5°	3.4	2.3	30.7	53.4	61.4
130°	3.4	2.3	25.0	46.6	53.4
132.5°	2.3	2.3	19.3	39.8	47.8
135°	2.3	1.1	13.6	34.1	39.8
137.5°	2.3	1.1	9.1	27.3	33.0
140°	1.1	1.1	4.5	21.6	27.3
142.5°	1.1	0.0	0.0	14.8	20.5
145°	1.1	0.0	0.0	9.1	13.6
147.5°	0.0	0.0	0.0	3.4	8.0
150°	0.0	0.0	0.0	0.0	2.3
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	17.87	19.37	18.36	19.85	20.37	19.87	21.37	20.36	21.85	22.37
	3H	19.43	20.80	19.93	21.29	21.85	22.24	23.62	22.75	24.11	24.66
	4H	19.95	21.25	20.47	21.76	22.33	23.36	24.66	23.88	25.16	25.73
	6H	20.29	21.50	20.83	22.02	22.61	24.47	25.68	25.00	26.20	26.78
	8H	20.38	21.54	20.93	22.08	22.67	25.02	26.18	25.57	26.72	27.32
	12H	20.43	21.54	20.98	22.08	22.70	25.63	26.74	26.18	27.28	27.90
4H	2H	18.78	20.08	19.30	20.58	21.15	20.33	21.63	20.85	22.13	22.70
	3H	20.58	21.69	21.11	22.24	22.83	22.92	24.03	23.46	24.58	25.17
	4H	21.24	22.26	21.80	22.81	23.44	24.19	25.20	24.74	25.76	26.38
	6H	21.72	22.61	22.29	23.20	23.83	25.47	26.36	26.05	26.95	27.59
	8H	21.85	22.69	22.43	23.28	23.93	26.12	26.96	26.70	27.55	28.20
	12H	21.94	22.70	22.54	23.31	23.97	26.84	27.60	27.44	28.21	28.87
8H	4H	21.88	22.72	22.46	23.30	23.95	24.41	25.25	24.99	25.84	26.49
	6H	22.53	23.24	23.15	23.87	24.53	25.85	26.56	26.47	27.19	27.85
	8H	22.77	23.41	23.39	24.04	24.71	26.63	27.27	27.25	27.91	28.58
	12H	22.94	23.51	23.56	24.13	24.87	27.51	28.08	28.14	28.71	29.44
12H	4H	22.03	22.79	22.63	23.41	24.06	24.42	25.19	25.03	25.80	26.45
	6H	22.77	23.42	23.40	24.05	24.72	25.89	26.54	26.52	27.17	27.84
	8H	23.10	23.67	23.72	24.30	25.03	26.74	27.31	27.36	27.93	28.67