

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: P243541

Luminaire Tested: S124DRP-H1195D840-X4F0-XX-UDD-D-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243541  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-55)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124DRP-H1195D840-X4F0-XX-UDD-D-W  
Description: DEFINE 4 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

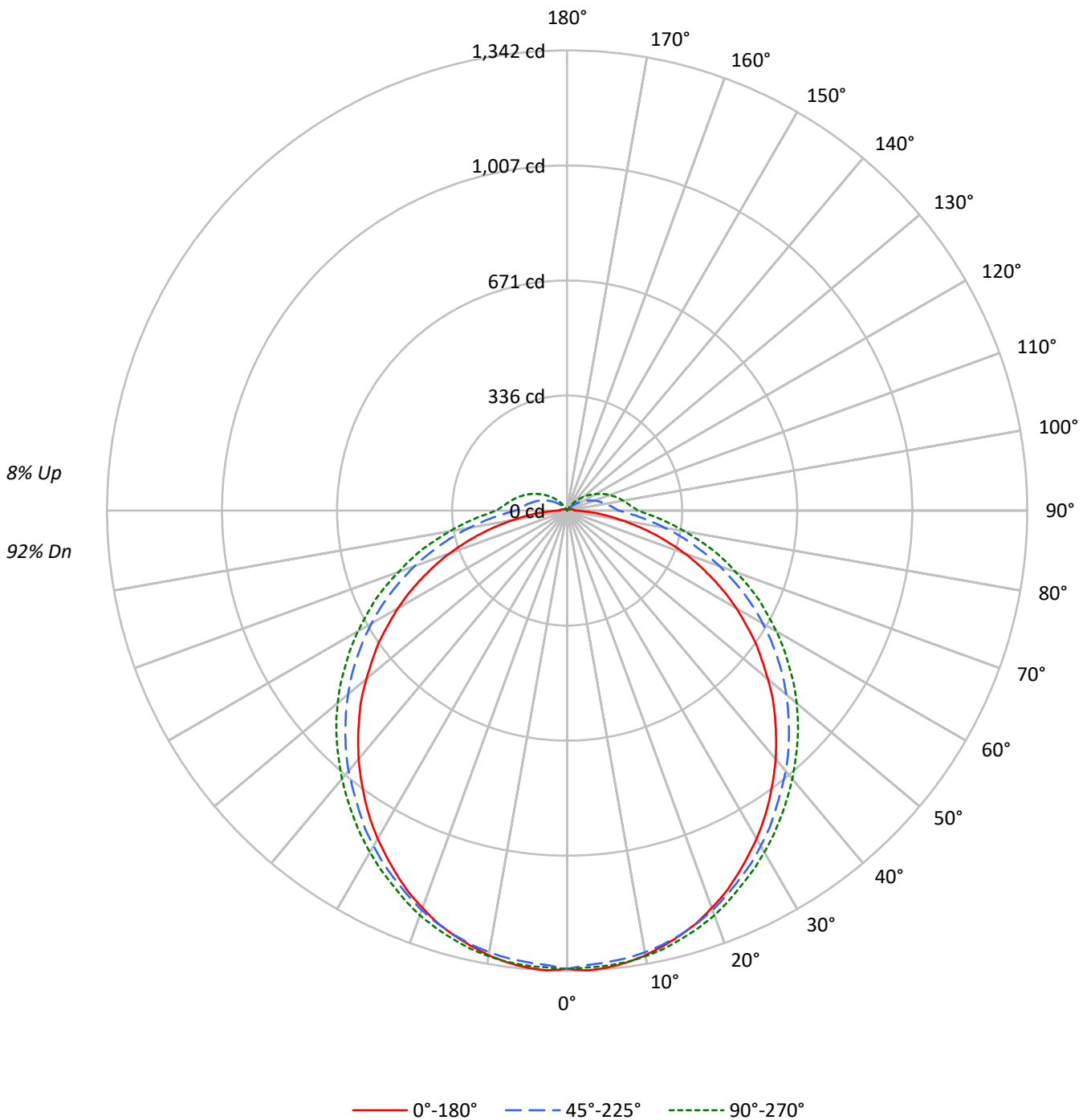
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4569.1 lumens  
Efficiency: N/A  
Efficacy: 121.2 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.31' x L: 3.88' x H: 0.08')  
CIE Type: Direct  
  
Input Watts (W): 37.7  
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	114	114	114	114	107	107	107	101	101	101	95	95	95	92
1	105	100	95	91	102	97	93	89	91	88	84	86	83	80	81	79	77	74
2	95	86	79	73	92	84	77	71	79	73	68	74	70	66	70	67	63	60
3	86	75	67	60	83	73	65	59	69	62	57	65	60	55	62	57	53	50
4	79	66	57	50	76	65	56	49	61	54	48	58	52	46	55	49	45	43
5	72	59	50	43	70	58	49	42	55	47	41	52	45	40	49	43	39	37
6	67	53	44	37	64	52	43	37	49	42	36	47	40	35	44	39	34	32
7	62	48	39	33	60	47	38	32	45	37	32	43	36	31	41	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	29	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°	11882	11882	11882
5°	11917	11594	11618
10°	11841	11399	11376
15°	11724	11168	11102
20°	11573	10921	10827
25°	11393	10636	10508
30°	11204	10371	10234
35°	10994	10077	9950
40°	10782	9825	9684
45°	10559	9553	9431
50°	10304	9277	9167
55°	10081	8986	8864
60°	9763	8661	8569
65°	9395	8296	8268
70°	8959	7881	7840
75°	8266	7372	7531
80°	7323	6882	7091
85°	6631	6486	6836

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 10559 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	126.6	2.8
10°-20°	362.9	7.9
20°-30°	549.2	12.0
30°-40°	665.1	14.6
40°-50°	703.5	15.4
50°-60°	662.7	14.5
60°-70°	550.7	12.1
70°-80°	387.1	8.5
80°-90°	218.0	4.8
90°-100°	129.4	2.8
100°-110°	95.8	2.1
110°-120°	63.9	1.4
120°-130°	36.1	0.8
130°-140°	15.4	0.3
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°	1038.7	22.7
0°-40°	1703.7	37.3
0°-60°	3069.9	67.2
0°-90°	4225.7	92.5
90°-120°	289.0	6.3
90°-150°	343.5	7.5
90°-180°	343.0	7.5
0°-180°	4569.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1337	1337	1337	1337	1337	
5°	1338	1332	1322	1334	1332	127
15°	1281	1284	1280	1294	1293	361
25°	1173	1183	1188	1205	1205	541
35°	1028	1046	1061	1084	1088	643
45°	858	885	915	942	950	662
55°	670	706	749	781	790	597
65°	467	514	567	602	618	463
75°	260	315	378	420	438	275
85°	81	144	212	257	271	83
90°	24	84	151	192	206	16
95°	20	68	131	172	183	16
105°	14	44	99	136	149	15
115°	10	23	70	102	115	10
125°	6	4	41	70	80	6
135°	3	3	13	37	46	3
145°	1	0	0	8	14	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°	1336.7	1336.7	1336.7	1336.7	1336.7
2.5°	1342.4	1338.1	1326.7	1335.3	1333.8
5°	1338.1	1332.4	1322.5	1333.8	1332.4
7.5°	1329.6	1325.3	1316.8	1329.6	1328.2
10°	1316.8	1314.0	1308.3	1319.6	1319.6
12.5°	1299.8	1299.8	1295.5	1308.3	1308.3
15°	1281.3	1284.1	1279.9	1294.1	1292.6
17.5°	1260.0	1262.8	1261.4	1275.6	1275.6
20°	1233.0	1237.2	1240.1	1255.7	1255.7
22.5°	1206.0	1211.7	1214.5	1231.6	1231.6
25°	1173.3	1183.3	1187.5	1204.6	1204.6
27.5°	1139.2	1152.0	1160.5	1176.2	1179.0
30°	1105.1	1119.3	1129.3	1146.3	1150.6
32.5°	1068.2	1082.4	1098.0	1115.1	1120.8
35°	1028.4	1045.5	1061.1	1083.8	1088.1
37.5°	987.2	1007.1	1025.6	1049.7	1055.4
40°	946.0	970.2	991.5	1014.2	1021.3
42.5°	902.0	926.2	954.6	978.7	985.8
45°	858.0	885.0	914.8	941.8	950.3
47.5°	813.9	842.4	875.0	903.4	913.4
50°	764.2	795.5	833.8	862.2	873.6
52.5°	715.9	750.0	792.6	821.0	833.8
55°	670.5	706.0	748.6	781.3	789.8
57.5°	617.9	657.7	704.6	740.1	748.6
60°	569.6	609.4	659.1	694.6	704.6
62.5°	519.9	562.5	613.7	649.2	659.1
65°	467.3	514.2	566.8	602.3	617.9
67.5°	416.2	463.1	518.5	558.3	571.0
70°	365.1	413.4	473.0	512.8	522.7
72.5°	311.1	363.6	424.7	465.9	480.1
75°	260.0	315.3	377.9	420.5	437.5
77.5°	210.2	268.5	333.8	377.9	389.2
80°	160.5	224.4	289.8	333.8	348.0
82.5°	120.7	180.4	248.6	295.5	306.8
85°	81.0	143.5	211.7	257.1	271.3
87.5°	48.3	112.2	177.6	220.2	234.4
90°	24.1	83.8	150.6	191.8	206.0
92.5°	21.3	75.3	139.2	180.4	194.6
95°	19.9	68.2	130.7	171.9	183.2
97.5°	18.5	62.5	122.2	161.9	174.7
100°	17.0	55.4	115.1	153.4	166.2
102.5°	15.6	49.7	106.5	144.9	157.7
105°	14.2	44.0	99.4	136.4	149.2
107.5°	12.8	38.4	92.3	127.8	140.6
110°	11.4	32.7	85.2	119.3	132.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	9.9	28.4	76.7	110.8	123.6
115°	9.9	22.7	69.6	102.3	115.1
117.5°	8.5	17.0	62.5	93.8	105.1
120°	8.5	12.8	55.4	85.2	96.6
122.5°	7.1	8.5	48.3	78.1	88.1
125°	5.7	4.3	41.2	69.6	79.5
127.5°	5.7	4.3	34.1	61.1	71.0
130°	4.3	4.3	27.0	52.6	62.5
132.5°	4.3	2.8	19.9	45.5	54.0
135°	2.8	2.8	12.8	36.9	45.5
137.5°	2.8	1.4	8.5	29.8	38.4
140°	2.8	1.4	2.8	22.7	29.8
142.5°	1.4	1.4	0.0	15.6	21.3
145°	1.4	0.0	0.0	8.5	14.2
147.5°	1.4	0.0	0.0	1.4	7.1
150°	0.0	0.0	0.0	0.0	0.0
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	18.39	19.91	18.87	20.38	20.88	19.97	21.50	20.45	21.96	22.46
	3H	20.04	21.43	20.53	21.90	22.44	22.28	23.67	22.77	24.15	24.68
	4H	20.61	21.93	21.12	22.42	22.97	23.35	24.67	23.86	25.16	25.71
	6H	20.99	22.22	21.52	22.72	23.29	24.40	25.62	24.92	26.13	26.70
	8H	21.10	22.27	21.63	22.80	23.38	24.91	26.09	25.45	26.62	27.19
	12H	21.16	22.29	21.70	22.81	23.41	25.46	26.59	26.01	27.11	27.72
4H	2H	19.25	20.56	19.76	21.06	21.61	20.47	21.79	20.98	22.28	22.83
	3H	21.13	22.25	21.66	22.79	23.36	23.00	24.13	23.53	24.66	25.23
	4H	21.84	22.87	22.39	23.41	24.02	24.23	25.26	24.77	25.80	26.41
	6H	22.36	23.26	22.92	23.84	24.46	25.45	26.36	26.02	26.93	27.55
	8H	22.52	23.37	23.09	23.94	24.57	26.06	26.91	26.63	27.48	28.11
	12H	22.62	23.39	23.21	23.99	24.63	26.72	27.49	27.31	28.09	28.73
8H	4H	22.43	23.28	22.99	23.85	24.48	24.48	25.33	25.05	25.91	26.54
	6H	23.12	23.84	23.72	24.45	25.09	25.87	26.59	26.47	27.20	27.84
	8H	23.37	24.02	23.98	24.64	25.29	26.61	27.25	27.22	27.88	28.53
	12H	23.56	24.14	24.17	24.75	25.46	27.43	28.01	28.05	28.62	29.34
12H	4H	22.56	23.33	23.15	23.93	24.57	24.50	25.27	25.09	25.87	26.51
	6H	23.33	23.98	23.94	24.60	25.25	25.92	26.57	26.53	27.19	27.84
	8H	23.67	24.25	24.28	24.86	25.57	26.72	27.30	27.34	27.91	28.63