

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: P243486

Luminaire Tested: S124DRP-H1020D940-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243486  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-84)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124DRP-H1020D940-X4F0-XX-UDD-F-W  
Description: DEFINE 4 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

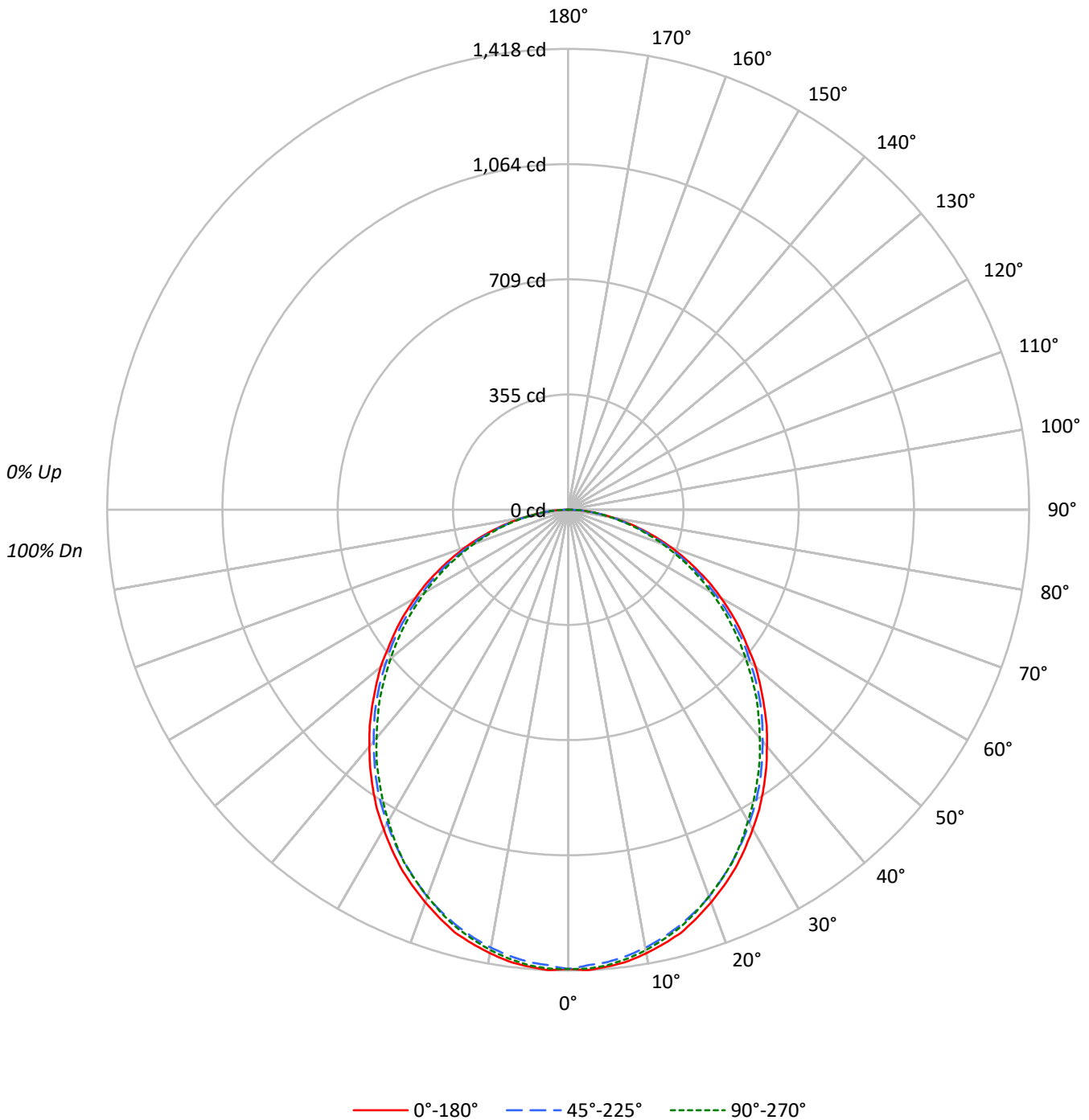
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3638.3 lumens  
Efficiency: N/A  
Efficacy: 115.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3  
Luminous Opening: Rectangular (W 0.31' x L: 3.88' x H: 0')  
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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	73	70
3	91	80	72	66	88	79	71	65	76	69	64	73	67	63	70	66	62	60
4	83	71	63	56	81	70	62	56	67	60	55	65	59	54	63	58	53	51
5	77	64	55	48	74	63	54	48	61	53	48	59	52	47	57	51	47	44
6	71	58	49	42	69	57	48	42	55	47	42	53	46	41	52	46	41	39
7	66	52	44	38	64	51	43	37	50	43	37	49	42	37	47	41	37	35
8	61	48	39	34	60	47	39	33	46	38	33	45	38	33	43	37	33	31
9	57	44	36	30	56	43	36	30	42	35	30	41	35	30	40	34	30	28
10	54	41	33	28	52	40	33	27	39	32	27	38	32	27	37	31	27	25

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

	0°	45°	90°
0°	12563	12563	12563
5°	12590	12467	12549
10°	12507	12352	12424
15°	12392	12191	12244
20°	12162	11988	11977
25°	11933	11718	11730
30°	11650	11426	11355
35°	11368	11143	11007
40°	11035	10795	10635
45°	10712	10495	10293
50°	10416	10114	9860
55°	10033	9766	9463
60°	9650	9323	9036
65°	9191	8876	8586
70°	8696	8309	8039
75°	8016	7700	7463
80°	7064	6946	6767
85°	6211	6211	6099

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 10712 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	133.3	3.7
10°-20°	375.7	10.3
20°-30°	553.3	15.2
30°-40°	643.7	17.7
40°-50°	644.0	17.7
50°-60°	563.2	15.5
60°-70°	418.3	11.5
70°-80°	238.3	6.5
80°-90°	68.6	1.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1062.2	29.2
0°-40°	1705.9	46.9
0°-60°	2913.1	80.1
0°-90°	3638.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3638.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1413	1413	1413	1413	1413	
5°	1411	1409	1397	1408	1406	134
15°	1347	1340	1325	1333	1330	379
25°	1217	1211	1195	1198	1196	560
35°	1048	1038	1027	1018	1014	655
45°	852	849	835	822	819	658
55°	647	643	630	616	611	579
65°	437	434	422	413	408	434
75°	233	229	224	220	217	248
85°	61	60	61	59	60	70
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1413.3	1413.3	1413.3	1413.3	1413.3
2.5°	1417.9	1414.5	1403.0	1414.5	1413.3
5°	1411.0	1408.7	1397.2	1407.6	1406.4
7.5°	1401.8	1397.2	1384.6	1394.9	1393.8
10°	1385.7	1382.3	1368.5	1378.8	1376.5
12.5°	1367.3	1363.9	1348.9	1357.0	1354.7
15°	1346.6	1339.7	1324.8	1332.8	1330.5
17.5°	1316.7	1312.1	1297.2	1304.1	1300.6
20°	1285.7	1279.9	1267.3	1268.4	1266.1
22.5°	1252.3	1246.6	1231.6	1236.2	1231.6
25°	1216.7	1210.9	1194.8	1198.3	1196.0
27.5°	1176.4	1170.7	1155.7	1156.9	1152.3
30°	1135.0	1128.1	1113.2	1112.0	1106.3
32.5°	1093.6	1086.7	1071.8	1067.2	1061.4
35°	1047.6	1038.4	1026.9	1017.7	1014.3
37.5°	1000.5	995.9	978.6	972.9	968.3
40°	951.0	946.4	930.3	922.3	916.5
42.5°	903.9	898.1	883.2	871.7	867.1
45°	852.1	848.7	834.9	822.2	818.8
47.5°	801.5	800.4	783.1	770.5	764.7
50°	753.2	746.3	731.4	719.9	713.0
52.5°	696.9	695.7	683.1	668.1	662.4
55°	647.4	642.8	630.2	616.4	610.6
57.5°	595.7	593.4	577.3	565.8	560.0
60°	542.8	538.2	524.4	514.0	508.3
62.5°	492.2	486.4	473.8	463.4	457.7
65°	437.0	433.5	422.0	412.8	408.2
67.5°	385.2	380.6	369.1	361.1	356.5
70°	334.6	327.7	319.7	312.8	309.3
72.5°	284.0	278.3	271.4	266.8	262.2
75°	233.4	228.8	224.2	219.6	217.3
77.5°	185.1	180.5	178.2	177.1	174.8
80°	138.0	135.7	135.7	134.5	132.2
82.5°	97.7	95.4	95.4	95.4	94.3
85°	60.9	59.8	60.9	58.6	59.8
87.5°	28.7	28.7	29.9	28.7	29.9
90°	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	20.09	21.71	20.46	22.02	22.33	19.74	21.36	20.11	21.67	21.99
	3H	21.84	23.30	22.22	23.63	23.99	21.45	22.91	21.83	23.24	23.60
	4H	22.50	23.87	22.90	24.22	24.60	22.10	23.48	22.50	23.82	24.20
	6H	22.97	24.25	23.39	24.61	25.00	22.59	23.87	23.00	24.23	24.62
	8H	23.13	24.34	23.55	24.73	25.13	22.75	23.97	23.18	24.36	24.76
	12H	23.23	24.40	23.66	24.78	25.21	22.87	24.03	23.30	24.41	24.84
4H	2H	20.66	22.04	21.06	22.38	22.76	20.39	21.76	20.79	22.11	22.48
	3H	22.64	23.79	23.05	24.19	24.59	22.32	23.47	22.73	23.87	24.27
	4H	23.42	24.46	23.85	24.88	25.31	23.09	24.13	23.53	24.55	24.98
	6H	24.02	24.93	24.48	25.37	25.83	23.71	24.62	24.17	25.06	25.52
	8H	24.22	25.08	24.68	25.52	25.98	23.92	24.77	24.38	25.21	25.68
	12H	24.37	25.14	24.86	25.62	26.08	24.08	24.84	24.56	25.32	25.79
8H	4H	23.70	24.56	24.17	25.00	25.46	23.41	24.27	23.88	24.71	25.17
	6H	24.42	25.13	24.92	25.62	26.10	24.16	24.86	24.65	25.35	25.83
	8H	24.70	25.33	25.21	25.84	26.32	24.44	25.08	24.95	25.58	26.07
	12H	24.92	25.48	25.43	25.98	26.54	24.68	25.24	25.18	25.73	26.29
12H	4H	23.73	24.50	24.21	24.97	25.44	23.45	24.21	23.93	24.69	25.16
	6H	24.48	25.11	24.98	25.62	26.10	24.22	24.85	24.73	25.36	25.84
	8H	24.81	25.37	25.31	25.86	26.42	24.56	25.12	25.07	25.61	26.17