

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: P243471

Luminaire Tested: S124DRP-H1020D840-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P243471  
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-H1020D840-X4F0-XX-UDD-F-W  
Description: DEFINE 4 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

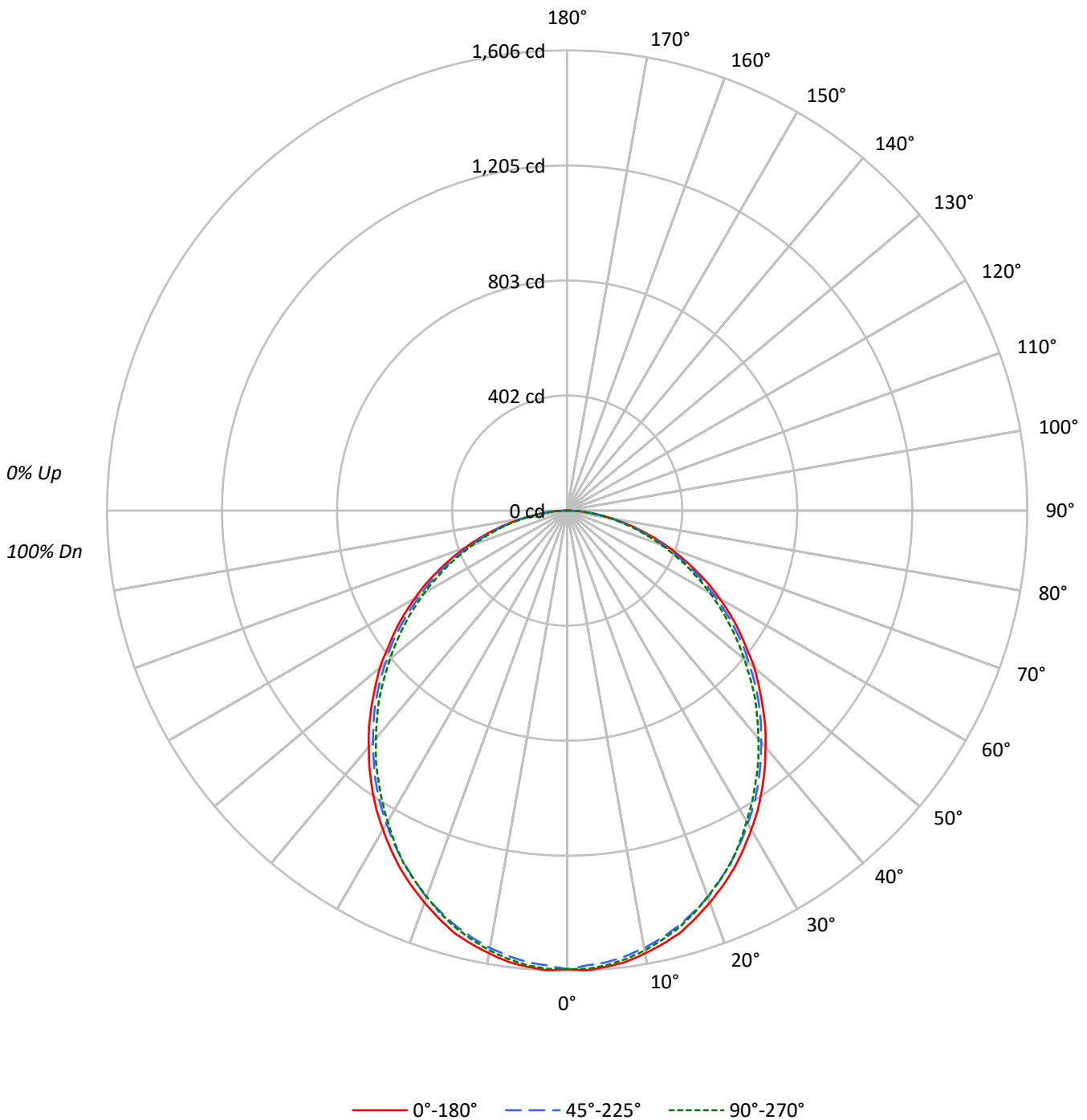
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4120.5 lumens  
Efficiency: N/A  
Efficacy: 130.8 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	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	48	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°	14228	14228	14228
5°	14259	14120	14212
10°	14165	13989	14071
15°	14035	13806	13866
20°	13773	13576	13564
25°	13514	13271	13284
30°	13193	12940	12860
35°	12874	12620	12465
40°	12497	12226	12045
45°	12131	11886	11657
50°	11796	11454	11167
55°	11363	11060	10716
60°	10928	10558	10233
65°	10409	10054	9724
70°	9850	9411	9104
75°	9081	8723	8452
80°	8001	7868	7668
85°	7037	7037	6905

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 12131 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	150.9	3.7
10°-20°	425.5	10.3
20°-30°	626.6	15.2
30°-40°	729.0	17.7
40°-50°	729.3	17.7
50°-60°	637.8	15.5
60°-70°	473.7	11.5
70°-80°	269.9	6.6
80°-90°	77.8	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°	1202.9	29.2
0°-40°	1931.9	46.9
0°-60°	3299.1	80.1
0°-90°	4120.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4120.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1601	1601	1601	1601	1601	
5°	1598	1595	1582	1594	1593	152
15°	1525	1517	1500	1509	1507	429
25°	1378	1371	1353	1357	1354	634
35°	1186	1176	1163	1153	1149	742
45°	965	961	946	931	927	745
55°	733	728	714	698	692	655
65°	495	491	478	468	462	491
75°	264	259	254	249	246	280
85°	69	68	69	66	68	79
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1600.6	1600.6	1600.6	1600.6	1600.6
2.5°	1605.8	1601.9	1588.9	1601.9	1600.6
5°	1598.0	1595.4	1582.4	1594.1	1592.8
7.5°	1587.6	1582.4	1568.0	1579.8	1578.4
10°	1569.3	1565.4	1549.8	1561.5	1558.9
12.5°	1548.5	1544.6	1527.7	1536.8	1534.2
15°	1525.1	1517.2	1500.3	1509.4	1506.8
17.5°	1491.2	1486.0	1469.1	1476.9	1473.0
20°	1456.0	1449.5	1435.2	1436.5	1433.9
22.5°	1418.3	1411.7	1394.8	1400.0	1394.8
25°	1377.9	1371.4	1353.1	1357.0	1354.4
27.5°	1332.3	1325.8	1308.9	1310.2	1305.0
30°	1285.4	1277.6	1260.7	1259.4	1252.9
32.5°	1238.5	1230.7	1213.8	1208.6	1202.1
35°	1186.4	1176.0	1163.0	1152.6	1148.7
37.5°	1133.0	1127.8	1108.3	1101.8	1096.6
40°	1077.0	1071.8	1053.6	1044.5	1038.0
42.5°	1023.6	1017.1	1000.2	987.2	982.0
45°	965.0	961.1	945.5	931.2	927.3
47.5°	907.7	906.4	886.9	872.6	866.1
50°	853.0	845.2	828.3	815.3	807.5
52.5°	789.2	787.9	773.6	756.7	750.2
55°	733.2	728.0	713.7	698.1	691.5
57.5°	674.6	672.0	653.8	640.8	634.2
60°	614.7	609.5	593.9	582.2	575.6
62.5°	557.4	550.9	536.6	524.8	518.3
65°	494.9	491.0	478.0	467.5	462.3
67.5°	436.3	431.1	418.1	408.9	403.7
70°	379.0	371.2	362.1	354.2	350.3
72.5°	321.7	315.2	307.4	302.1	296.9
75°	264.4	259.2	254.0	248.7	246.1
77.5°	209.7	204.5	201.9	200.6	198.0
80°	156.3	153.7	153.7	152.4	149.8
82.5°	110.7	108.1	108.1	108.1	106.8
85°	69.0	67.7	69.0	66.4	67.7
87.5°	32.6	32.6	33.9	32.6	33.9
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	20.52	22.14	20.89	22.45	22.77	20.18	21.79	20.54	22.10	22.42
	3H	22.28	23.73	22.65	24.06	24.42	21.89	23.35	22.26	23.67	24.03
	4H	22.93	24.31	23.33	24.65	25.03	22.54	23.91	22.93	24.26	24.63
	6H	23.41	24.68	23.82	25.05	25.44	23.02	24.30	23.44	24.66	25.05
	8H	23.56	24.78	23.98	25.16	25.56	23.19	24.40	23.61	24.79	25.19
	12H	23.67	24.83	24.09	25.21	25.64	23.30	24.46	23.73	24.85	25.27
4H	2H	21.10	22.47	21.49	22.82	23.19	20.82	22.19	21.22	22.54	22.92
	3H	23.07	24.22	23.48	24.62	25.02	22.75	23.90	23.16	24.30	24.70
	4H	23.86	24.90	24.29	25.31	25.75	23.53	24.57	23.96	24.98	25.42
	6H	24.46	25.37	24.91	25.81	26.26	24.14	25.05	24.60	25.49	25.95
	8H	24.66	25.51	25.12	25.95	26.42	24.35	25.20	24.81	25.65	26.11
	12H	24.81	25.57	25.29	26.05	26.52	24.51	25.28	24.99	25.75	26.22
8H	4H	24.14	24.99	24.60	25.43	25.90	23.85	24.70	24.31	25.14	25.61
	6H	24.86	25.57	25.35	26.05	26.53	24.59	25.30	25.08	25.79	26.26
	8H	25.13	25.77	25.64	26.27	26.76	24.87	25.51	25.38	26.02	26.50
	12H	25.36	25.92	25.86	26.41	26.97	25.11	25.67	25.62	26.16	26.72
12H	4H	24.17	24.93	24.65	25.41	25.88	23.88	24.65	24.36	25.12	25.59
	6H	24.91	25.55	25.42	26.05	26.54	24.65	25.29	25.16	25.79	26.28
	8H	25.24	25.80	25.75	26.29	26.85	24.99	25.56	25.50	26.05	26.61