

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: P735892

Luminaire Tested: S122DRP-S865D850-X4F0-XX-UDD-W-W

Issue Date: 1/24/2024

**Test Information**

Test Method: LM-79-2024  
Report Number: P735892  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2308-143-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 1/24/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S122DRP-S865D850-X4F0-XX-UDD-W-W  
Description: DEFINE 2 DIRECT RECESSED WITH WALL WASH OPTIC  
Light Source: 5000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

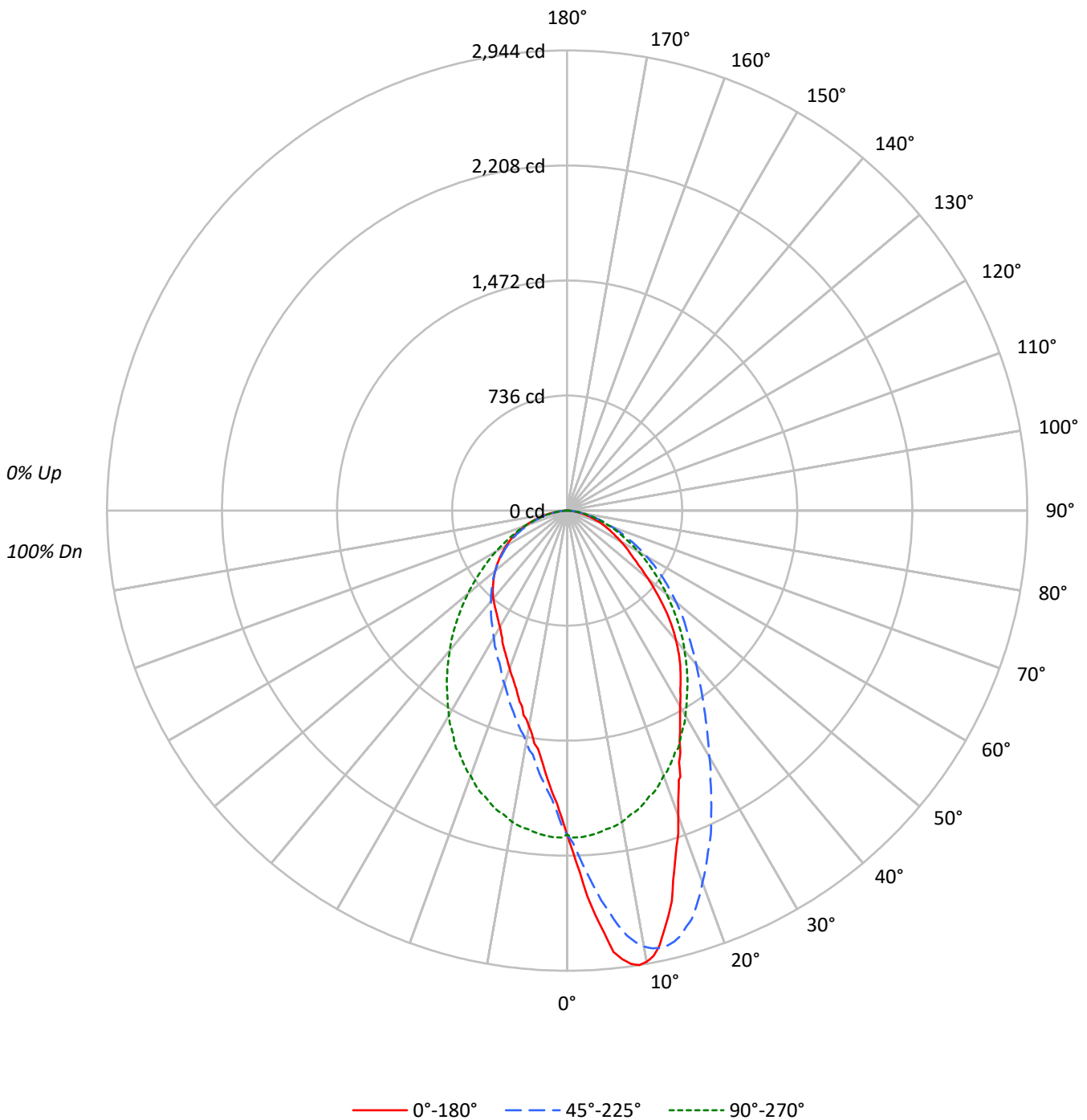
Lumens per Lamp: N/A  
Luminaire Lumens: 4219.0 lumens  
Efficiency: N/A  
Efficacy: 120.5 lumens/watt  
Spacing Criteria (0/90/45): 0.9 / 1.11 / 1.12  
Luminous Opening: Rectangular (W 4' x L: 0.14' x H: 0')  
CIE Type: Direct

Input Watts (W): 35  
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	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	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86																												
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	74																												
3	93	83	76	70	91	82	75	69	79	73	68	76	71	67	74	69	66	64																												
4	86	75	67	60	83	73	66	60	71	64	59	69	63	58	67	62	58	56																												
5	79	67	59	53	77	66	58	53	64	57	52	62	56	52	61	55	51	49																												
6	74	61	53	47	72	60	52	47	59	52	46	57	51	46	55	50	46	44																												
7	69	56	48	42	67	55	47	42	54	47	42	52	46	41	51	45	41	39																												
8	64	51	43	38	63	51	43	38	50	43	38	48	42	37	47	41	37	35																												
9	60	48	40	35	59	47	40	34	46	39	34	45	39	34	44	38	34	32																												
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	30																												

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

	0°	45°	90°	135°	180°
0°	39857	39857	39857	39857	39857
5°	52273	48312	40064	33602	32062
10°	57216	55298	39471	29372	27370
15°	51472	56009	38398	26516	24275
20°	42472	51800	36933	24049	22009
25°	36300	46213	35634	22245	20402
30°	32105	40361	33592	20845	19105
35°	29695	35749	31502	19863	18558
40°	27177	32255	29322	19024	18452
45°	23940	29442	27118	18441	18207
50°	20158	27146	24843	17942	17984
55°	16953	24976	22446	17335	17670
60°	15285	22573	20378	16819	17311
65°	13872	19834	18147	16009	16983
70°	12493	17141	16337	14814	16101
75°	10902	14497	13969	13442	14712
80°	9154	11357	11357	11678	12309
85°	6925	8182	8491	9108	8800

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 43232 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	204.1	4.8
10°-20°	560.1	13.3
20°-30°	734.5	17.4
30°-40°	776.3	18.4
40°-50°	720.8	17.1
50°-60°	576.9	13.7
60°-70°	394.5	9.4
70°-80°	203.6	4.8
80°-90°	48.4	1.1
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°	1498.6	35.5
0°-40°	2274.9	53.9
0°-60°	3572.5	84.7
0°-90°	4219.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4219.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2074	2074	2074	2074	2074	
5°	2709	2504	2076	1742	1662	267
15°	2587	2815	1930	1332	1220	710
25°	1712	2179	1680	1049	962	789
35°	1266	1524	1342	846	791	790
45°	881	1083	998	678	670	676
55°	506	745	670	517	527	463
65°	305	436	399	352	373	303
75°	147	195	188	181	198	156
85°	31	37	38	41	40	38
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	2073.6	2073.6	2073.6	2073.6	2073.6	2073.6	2073.6	2073.6	2073.6
1°	2187.6	2176.2	2126.3	2129.1	2092.1	2050.8	2012.3	1988.1	1968.1
2°	2315.8	2293.0	2214.6	2176.2	2092.1	2003.7	1923.9	1902.5	1875.5
3°	2471.2	2417.0	2308.7	2217.5	2089.2	1961.0	1851.2	1812.8	1808.5
4°	2596.6	2548.1	2404.2	2260.3	2082.1	1919.6	1795.7	1754.3	1734.4
5°	2709.2	2677.8	2503.9	2314.4	2076.4	1879.7	1741.5	1684.5	1661.7
6°	2838.9	2774.7	2583.8	2368.6	2066.4	1841.3	1693.1	1624.6	1593.3
7°	2891.6	2851.7	2673.5	2404.2	2053.6	1797.1	1631.8	1557.7	1534.9
8°	2928.6	2913.0	2744.8	2462.6	2047.9	1755.8	1577.6	1532.0	1504.9
9°	2944.3	2931.5	2796.1	2486.8	2037.9	1734.4	1550.5	1475.0	1445.1
10°	2931.5	2937.2	2833.2	2523.9	2022.3	1690.2	1504.9	1439.4	1402.3
11°	2901.6	2915.8	2853.1	2566.7	2002.3	1654.6	1463.6	1396.6	1361.0
12°	2844.6	2875.9	2861.7	2596.6	1983.8	1623.2	1435.1	1371.0	1339.6
13°	2756.2	2826.0	2856.0	2609.4	1972.4	1587.6	1399.5	1325.4	1285.5
14°	2676.4	2749.1	2840.3	2637.9	1952.4	1547.7	1366.7	1292.6	1258.4
15°	2586.6	2670.7	2814.6	2646.5	1929.6	1514.9	1332.5	1251.3	1219.9
16°	2461.2	2573.8	2767.6	2656.4	1902.5	1477.9	1301.1	1224.2	1182.9
17°	2357.2	2478.3	2732.0	2662.1	1888.3	1449.4	1274.1	1182.9	1155.8
18°	2261.7	2398.5	2667.8	2657.9	1865.5	1416.6	1234.2	1152.9	1127.3
19°	2186.1	2297.3	2603.7	2647.9	1834.1	1385.2	1204.2	1131.6	1101.6
20°	2076.4	2204.7	2532.4	2643.6	1805.6	1356.7	1175.7	1101.6	1076.0
21°	1985.2	2116.3	2466.9	2629.4	1785.7	1329.6	1154.4	1073.1	1050.3
22.5°	1865.5	1980.9	2357.2	2602.3	1741.5	1284.0	1107.3	1046.0	1014.7
23°	1851.2	1949.6	2328.7	2593.7	1728.7	1274.1	1091.6	1030.4	1004.7
24°	1761.5	1865.5	2261.7	2566.7	1695.9	1242.7	1066.0	1011.8	981.9
25°	1711.6	1797.1	2179.0	2541.0	1680.2	1214.2	1048.9	987.6	962.0
26°	1641.7	1740.1	2104.9	2503.9	1646.0	1188.6	1021.8	966.2	942.0
27°	1590.4	1673.1	2028.0	2476.9	1606.1	1161.5	1000.4	944.9	914.9
28°	1540.6	1620.4	1953.8	2432.7	1577.6	1131.6	984.8	926.3	897.8
29°	1489.3	1559.1	1894.0	2398.5	1550.5	1105.9	960.5	902.1	875.0
30°	1446.5	1510.6	1818.5	2352.9	1513.5	1076.0	939.2	885.0	860.8
32.5°	1348.2	1402.3	1664.5	2244.6	1425.1	1016.1	887.9	838.0	823.7
35°	1265.5	1301.1	1523.5	2123.4	1342.5	952.0	846.5	798.1	790.9
37.5°	1178.6	1212.8	1395.2	1996.6	1255.5	893.6	799.5	768.1	762.4
40°	1083.1	1128.7	1285.5	1871.2	1168.6	836.5	758.2	733.9	735.4
42.5°	987.6	1040.3	1178.6	1724.4	1087.4	782.4	718.3	701.2	704.0
45°	880.7	947.7	1083.1	1590.4	997.6	731.1	678.4	669.8	669.8
47.5°	769.6	855.1	1000.4	1452.2	912.1	679.8	639.9	634.2	637.0
50°	674.1	751.0	907.8	1318.2	830.8	632.8	600.0	598.6	601.4
52.5°	580.0	657.0	826.6	1192.8	748.2	590.0	561.5	561.5	564.4
55°	505.9	565.8	745.3	1061.7	669.8	540.1	517.3	521.6	527.3
57.5°	454.6	494.5	665.5	936.3	597.1	491.7	477.4	480.3	487.4
60°	397.6	429.0	587.2	820.9	530.1	444.6	437.5	443.2	450.3
62.5°	346.3	373.4	513.0	716.8	457.5	399.0	396.2	404.7	411.9
65°	305.0	323.5	436.1	611.4	399.0	353.4	352.0	364.8	373.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
67.5°	262.2	276.5	369.1	511.6	340.6	307.8	307.8	322.1	329.2
70°	222.3	233.7	305.0	421.8	290.7	262.2	263.6	280.7	286.5
72.5°	181.0	191.0	248.0	339.2	235.1	219.5	223.7	238.0	243.7
75°	146.8	153.9	195.2	267.9	188.1	175.3	181.0	193.8	198.1
77.5°	112.6	118.3	143.9	196.7	143.9	136.8	142.5	153.9	153.9
80°	82.7	84.1	102.6	138.2	102.6	98.3	105.5	111.2	111.2
82.5°	54.2	57.0	67.0	88.4	68.4	67.0	69.8	74.1	74.1
85°	31.4	32.8	37.1	48.5	38.5	38.5	41.3	41.3	39.9
87.5°	12.8	14.3	15.7	18.5	17.1	18.5	18.5	15.7	17.1
90°	0.0	0.0	0.0	0.0	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	22.02	23.54	22.39	23.86	24.17	21.60	23.12	21.96	23.43	23.75
	3H	23.22	24.59	23.60	24.92	25.28	23.11	24.48	23.49	24.81	25.17
	4H	23.62	24.90	24.02	25.25	25.63	23.64	24.92	24.04	25.27	25.65
	6H	23.87	25.06	24.29	25.43	25.82	23.99	25.18	24.40	25.54	25.93
	8H	23.94	25.07	24.36	25.45	25.86	24.09	25.22	24.51	25.60	26.01
	12H	23.97	25.05	24.40	25.43	25.86	24.14	25.22	24.57	25.60	26.03
4H	2H	23.08	24.36	23.48	24.71	25.09	22.67	23.95	23.07	24.30	24.68
	3H	24.44	25.51	24.85	25.91	26.31	24.29	25.36	24.71	25.76	26.16
	4H	24.90	25.86	25.34	26.28	26.72	24.88	25.83	25.31	26.25	26.69
	6H	25.22	26.05	25.67	26.49	26.95	25.30	26.13	25.75	26.57	27.03
	8H	25.29	26.07	25.76	26.52	26.98	25.41	26.19	25.88	26.64	27.10
	12H	25.34	26.04	25.82	26.52	26.99	25.49	26.19	25.97	26.66	27.13
8H	4H	25.26	26.04	25.72	26.48	26.95	25.22	26.00	25.68	26.44	26.91
	6H	25.66	26.30	26.16	26.80	27.27	25.74	26.38	26.23	26.87	27.35
	8H	25.78	26.36	26.30	26.87	27.36	25.90	26.48	26.42	26.99	27.48
	12H	25.87	26.38	26.38	26.87	27.44	26.03	26.54	26.54	27.03	27.59
12H	4H	25.28	25.98	25.76	26.46	26.93	25.23	25.93	25.72	26.41	26.88
	6H	25.71	26.28	26.22	26.79	27.28	25.78	26.36	26.29	26.87	27.35
	8H	25.88	26.39	26.39	26.88	27.44	26.00	26.50	26.51	27.00	27.56