

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: P735889

Luminaire Tested: S122DRP-S865D830-X4F0-XX-UDD-W-W

Issue Date: 1/24/2024

**Test Information**

Test Method: LM-79-2024  
Report Number: P735889  
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-S865D830-X4F0-XX-UDD-W-W  
Description: DEFINE 2 DIRECT RECESSED WITH WALL WASH OPTIC  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

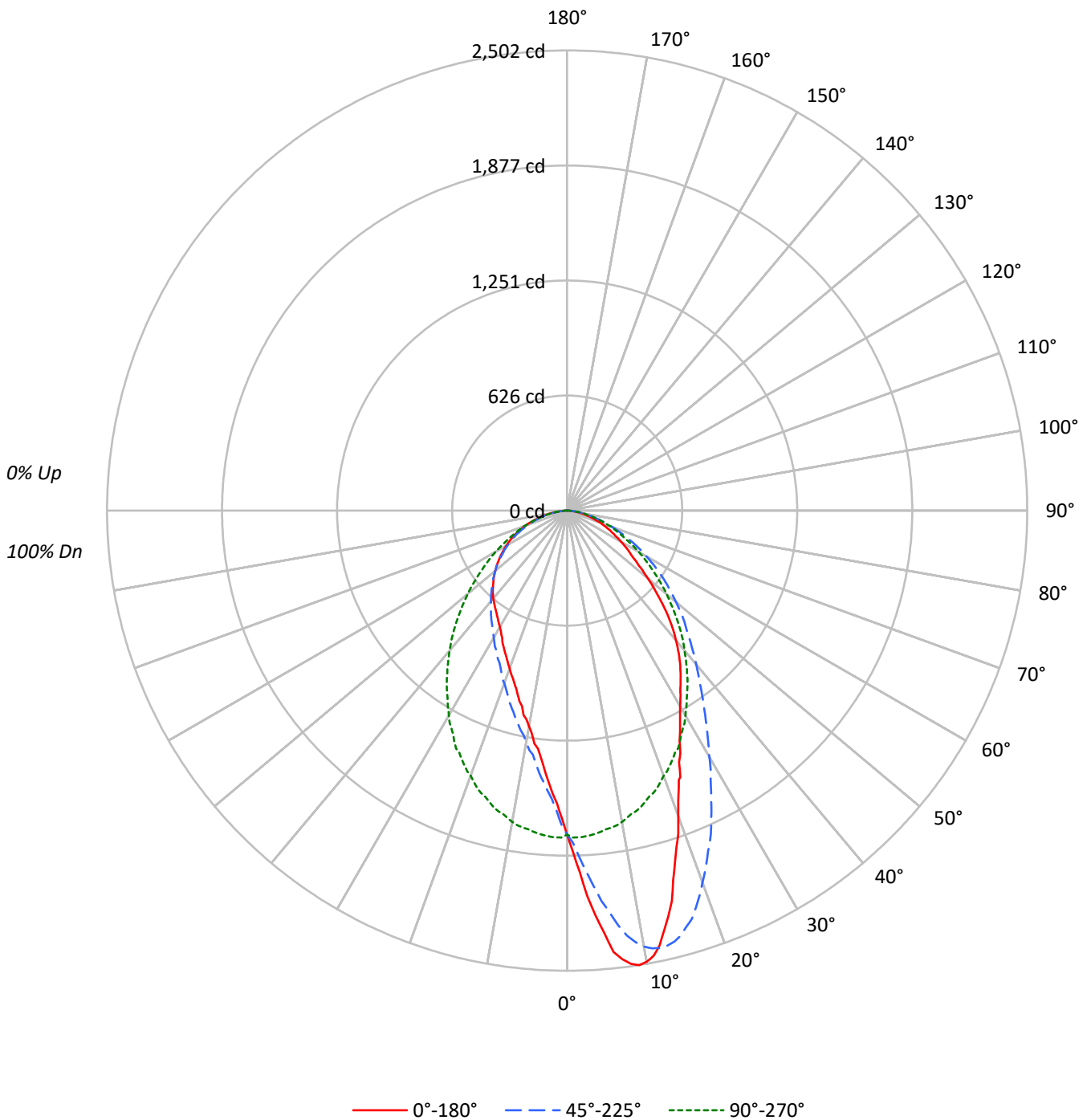
Lumens per Lamp: N/A  
Luminaire Lumens: 3585.7 lumens  
Efficiency: N/A  
Efficacy: 102.4 lumens/watt  
Spacing Criteria (0/90/45): 0.9 / 1.11 / 1.12  
Luminous Opening: Rectangular (W 4' x L: 0.14' x H: 0')  
CIE Type: Direct

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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86				86
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	74				74
3	93	83	76	70	91	82	75	69	79	73	68	76	71	67	74	69	66	64				64
4	86	75	67	60	83	73	66	60	71	64	59	69	63	58	67	62	58	56				56
5	79	67	59	53	77	66	58	53	64	57	52	62	56	52	61	55	51	49				49
6	74	61	53	47	72	60	52	47	59	52	46	57	51	46	55	50	46	44				44
7	69	56	48	42	67	55	47	42	54	47	42	52	46	41	51	45	41	39				39
8	64	51	43	38	63	51	43	38	50	43	38	48	42	37	47	41	37	35				35
9	60	48	40	35	59	47	40	34	46	39	34	45	39	34	44	38	34	32				32
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	30				30

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

	0°	45°	90°	135°	180°
0°	33874	33874	33874	33874	33874
5°	44426	41061	34049	28558	27250
10°	48629	46997	33545	24963	23261
15°	43747	47603	32635	22536	20632
20°	36097	44025	31390	20441	18706
25°	30852	39278	30285	18907	17340
30°	27286	34302	28549	17716	16238
35°	25239	30382	26773	16883	15773
40°	23097	27413	24921	16169	15682
45°	20346	25022	23048	15671	15475
50°	17131	23070	21115	15248	15283
55°	14410	21229	19078	14735	15020
60°	12990	19183	17322	14293	14712
65°	11789	16855	15423	13608	14431
70°	10622	14567	13887	12594	13685
75°	9268	12321	11875	11422	12506
80°	7782	9652	9652	9918	10460
85°	5866	6947	7212	7741	7476

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 36743 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	173.4	4.8
10°-20°	476.0	13.3
20°-30°	624.2	17.4
30°-40°	659.8	18.4
40°-50°	612.6	17.1
50°-60°	490.3	13.7
60°-70°	335.3	9.4
70°-80°	173.0	4.8
80°-90°	41.1	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°	1273.7	35.5
0°-40°	1933.4	53.9
0°-60°	3036.3	84.7
0°-90°	3585.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3585.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1762	1762	1762	1762	1762	
5°	2302	2128	1765	1480	1412	227
15°	2198	2392	1640	1132	1037	603
25°	1455	1852	1428	892	818	670
35°	1076	1295	1141	720	672	671
45°	748	920	848	576	569	575
55°	430	634	569	440	448	394
65°	259	371	339	299	317	257
75°	125	166	160	154	168	133
85°	27	32	33	35	34	32
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°	1762.3	1762.3	1762.3	1762.3	1762.3	1762.3	1762.3	1762.3	1762.3
1°	1859.2	1849.5	1807.1	1809.6	1778.1	1742.9	1710.2	1689.7	1672.7
2°	1968.2	1948.9	1882.2	1849.5	1778.1	1703.0	1635.1	1617.0	1594.0
3°	2100.3	2054.2	1962.2	1884.7	1775.6	1666.6	1573.4	1540.7	1537.0
4°	2206.8	2165.7	2043.3	1921.0	1769.6	1631.5	1526.1	1491.0	1474.1
5°	2302.5	2275.9	2128.1	1967.0	1764.7	1597.6	1480.1	1431.7	1412.3
6°	2412.7	2358.2	2195.9	2013.0	1756.3	1564.9	1438.9	1380.8	1354.1
7°	2457.6	2423.6	2272.2	2043.3	1745.4	1527.3	1386.8	1323.9	1304.5
8°	2489.1	2475.7	2332.8	2093.0	1740.5	1492.2	1340.8	1302.1	1279.0
9°	2502.4	2491.5	2376.4	2113.6	1732.0	1474.1	1317.8	1253.6	1228.2
10°	2491.5	2496.3	2407.9	2145.1	1718.7	1436.5	1279.0	1223.3	1191.8
11°	2466.0	2478.2	2424.9	2181.4	1701.8	1406.2	1243.9	1187.0	1156.7
12°	2417.6	2444.2	2432.1	2206.8	1686.0	1379.6	1219.7	1165.2	1138.5
13°	2342.5	2401.8	2427.3	2217.7	1676.3	1349.3	1189.4	1126.4	1092.5
14°	2274.7	2336.4	2414.0	2242.0	1659.4	1315.4	1161.6	1098.6	1069.5
15°	2198.4	2269.8	2392.2	2249.2	1640.0	1287.5	1132.5	1063.5	1036.8
16°	2091.8	2187.5	2352.2	2257.7	1617.0	1256.0	1105.8	1040.4	1005.3
17°	2003.4	2106.3	2321.9	2262.6	1604.9	1231.8	1082.8	1005.3	982.3
18°	1922.2	2038.5	2267.4	2258.9	1585.5	1204.0	1048.9	979.9	958.1
19°	1858.0	1952.5	2212.9	2250.4	1558.8	1177.3	1023.5	961.7	936.3
20°	1764.7	1873.8	2152.3	2246.8	1534.6	1153.1	999.3	936.3	914.5
21°	1687.2	1798.7	2096.6	2234.7	1517.7	1130.1	981.1	912.0	892.7
22.5°	1585.5	1683.6	2003.4	2211.7	1480.1	1091.3	941.1	889.0	862.4
23°	1573.4	1656.9	1979.1	2204.4	1469.2	1082.8	927.8	875.7	853.9
24°	1497.1	1585.5	1922.2	2181.4	1441.4	1056.2	906.0	860.0	834.5
25°	1454.7	1527.3	1852.0	2159.6	1428.0	1032.0	891.5	839.4	817.6
26°	1395.3	1478.9	1789.0	2128.1	1399.0	1010.2	868.4	821.2	800.6
27°	1351.7	1422.0	1723.6	2105.1	1365.0	987.1	850.3	803.0	777.6
28°	1309.3	1377.2	1660.6	2067.6	1340.8	961.7	837.0	787.3	763.1
29°	1265.7	1325.1	1609.7	2038.5	1317.8	939.9	816.4	766.7	743.7
30°	1229.4	1283.9	1545.5	1999.7	1286.3	914.5	798.2	752.2	731.6
32.5°	1145.8	1191.8	1414.7	1907.7	1211.2	863.6	754.6	712.2	700.1
35°	1075.6	1105.8	1294.8	1804.7	1141.0	809.1	719.5	678.3	672.2
37.5°	1001.7	1030.7	1185.8	1696.9	1067.1	759.4	679.5	652.8	648.0
40°	920.5	959.3	1092.5	1590.3	993.2	711.0	644.4	623.8	625.0
42.5°	839.4	884.2	1001.7	1465.6	924.2	665.0	610.5	595.9	598.3
45°	748.5	805.5	920.5	1351.7	847.9	621.4	576.5	569.3	569.3
47.5°	654.1	726.7	850.3	1234.2	775.2	577.8	543.8	539.0	541.4
50°	572.9	638.3	771.5	1120.4	706.1	537.8	509.9	508.7	511.1
52.5°	493.0	558.4	702.5	1013.8	635.9	501.4	477.2	477.2	479.6
55°	430.0	480.9	633.5	902.4	569.3	459.1	439.7	443.3	448.2
57.5°	386.4	420.3	565.6	795.8	507.5	417.9	405.8	408.2	414.2
60°	337.9	364.6	499.0	697.7	450.6	377.9	371.8	376.7	382.7
62.5°	294.3	317.3	436.0	609.2	388.8	339.1	336.7	344.0	350.0
65°	259.2	274.9	370.6	519.6	339.1	300.4	299.2	310.1	317.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
67.5°	222.9	235.0	313.7	434.8	289.5	261.6	261.6	273.7	279.8
70°	189.0	198.6	259.2	358.5	247.1	222.9	224.1	238.6	243.5
72.5°	153.8	162.3	210.8	288.3	199.9	186.5	190.2	202.3	207.1
75°	124.8	130.8	165.9	227.7	159.9	149.0	153.8	164.7	168.4
77.5°	95.7	100.5	122.3	167.1	122.3	116.3	121.1	130.8	130.8
80°	70.3	71.5	87.2	117.5	87.2	83.6	89.6	94.5	94.5
82.5°	46.0	48.4	56.9	75.1	58.1	56.9	59.3	63.0	63.0
85°	26.6	27.9	31.5	41.2	32.7	32.7	35.1	35.1	33.9
87.5°	10.9	12.1	13.3	15.7	14.5	15.7	15.7	13.3	14.5
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	21.46	22.98	21.82	23.29	23.61	21.03	22.56	21.40	22.87	23.18
	3H	22.66	24.03	23.04	24.35	24.72	22.55	23.91	22.92	24.24	24.60
	4H	23.06	24.34	23.46	24.69	25.07	23.07	24.36	23.47	24.70	25.08
	6H	23.31	24.49	23.72	24.86	25.25	23.43	24.61	23.84	24.98	25.37
	8H	23.37	24.50	23.80	24.89	25.29	23.52	24.65	23.95	25.04	25.44
	12H	23.40	24.48	23.83	24.86	25.29	23.58	24.66	24.01	25.04	25.47
4H	2H	22.51	23.80	22.91	24.15	24.52	22.10	23.39	22.50	23.73	24.11
	3H	23.88	24.94	24.29	25.34	25.74	23.73	24.80	24.14	25.20	25.60
	4H	24.34	25.30	24.77	25.71	26.15	24.31	25.27	24.74	25.69	26.12
	6H	24.65	25.48	25.11	25.93	26.39	24.73	25.57	25.19	26.01	26.47
	8H	24.73	25.51	25.19	25.95	26.42	24.85	25.63	25.31	26.07	26.54
	12H	24.78	25.47	25.26	25.95	26.42	24.92	25.62	25.41	26.10	26.57
8H	4H	24.69	25.47	25.16	25.92	26.39	24.65	25.43	25.12	25.88	26.34
	6H	25.10	25.74	25.59	26.23	26.71	25.17	25.82	25.67	26.31	26.78
	8H	25.22	25.79	25.73	26.30	26.79	25.34	25.92	25.85	26.43	26.91
	12H	25.30	25.81	25.81	26.31	26.87	25.46	25.97	25.97	26.46	27.03
12H	4H	24.72	25.41	25.20	25.89	26.36	24.67	25.37	25.15	25.84	26.31
	6H	25.14	25.72	25.65	26.23	26.72	25.21	25.79	25.73	26.30	26.79
	8H	25.31	25.82	25.82	26.31	26.88	25.43	25.94	25.94	26.43	27.00