

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P911126

Luminaire Tested: DFN2DIP-PN2F0-060D050US850-RLLFLL

Issue Date: 11/21/2024

**Test Information**

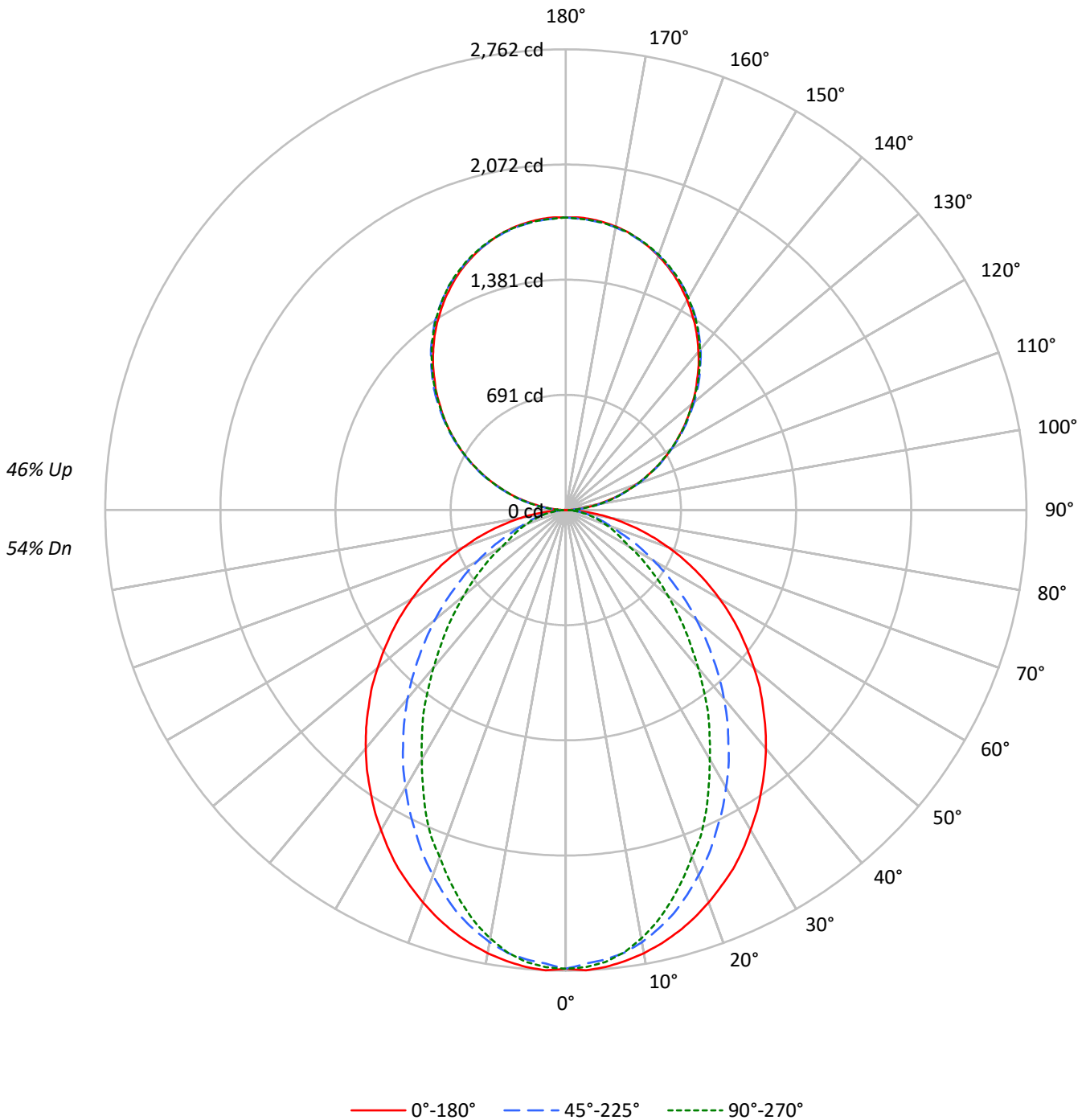
Test Method: LM-79-2019  
Report Number: P911126  
REPORT IS A COMBINATION OF REPORTS P899500 AND P896349  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-PN2F0-060D050US850-RLLFLL  
Description: 2 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10563.3 lumens  
Efficiency: N/A  
Efficacy: 99.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')  
CIE Type: General Diffuse  
  
Input Watts (W): 105.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.946  
Total Harmonic Distortion (THDi): 0.132  
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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59	59	59	59	54
1	99	95	91	88	92	88	85	82	76	73	71	64	62	61	53	52	51	53	52	51	46
2	91	84	78	73	84	78	73	68	67	63	60	57	54	52	48	46	44	48	46	44	39
3	83	74	67	61	77	69	63	58	59	55	51	51	47	44	43	40	38	43	40	38	34
4	76	66	58	52	71	61	55	49	53	48	44	46	42	38	38	36	33	38	36	33	30
5	70	59	51	45	65	55	48	43	48	42	38	41	37	34	35	32	29	35	32	29	26
6	65	53	45	39	60	50	43	37	43	38	34	37	33	30	32	29	26	32	29	26	23
7	60	48	40	35	56	45	38	33	39	34	30	34	30	27	29	26	23	29	26	23	21
8	56	44	36	31	52	41	34	30	36	31	27	31	27	24	27	24	21	27	24	21	19
9	52	40	33	28	48	38	31	27	33	28	24	29	25	22	25	22	19	25	22	19	17
10	49	37	30	25	45	35	28	24	31	25	22	27	23	20	23	20	18	23	20	18	16

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

	0°	45°	90°
0°	5956	5956	5956
5°	5956	5849	5891
10°	5888	5722	5690
15°	5797	5520	5386
20°	5680	5248	5016
25°	5561	4945	4658
30°	5403	4635	4208
35°	5249	4304	3812
40°	5091	3961	3360
45°	4908	3584	2951
50°	4719	3204	2552
55°	4520	2800	2170
60°	4289	2380	1777
65°	4023	1954	1590
70°	3700	1556	1426
75°	3294	1347	1281
80°	2710	1094	1084
85°	1771	680	769

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4908 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	257.7	2.4
10°-20°	707.6	6.7
20°-30°	993.4	9.4
30°-40°	1082.8	10.3
40°-50°	995.2	9.4
50°-60°	781.6	7.4
60°-70°	508.8	4.8
70°-80°	261.9	2.5
80°-90°	71.8	0.7
90°-100°	108.5	1.0
100°-110°	344.8	3.3
110°-120°	590.1	5.6
120°-130°	776.0	7.3
130°-140°	871.0	8.2
140°-150°	854.2	8.1
150°-160°	716.5	6.8
160°-170°	475.2	4.5
170°-180°	166.1	1.6
0°-30°	1958.7	18.5
0°-40°	3041.5	28.8
0°-60°	4818.4	45.6
0°-90°	5660.9	53.6
90°-120°	1043.4	9.9
90°-150°	3544.6	33.6
90°-180°	4902.0	46.4
0°-180°	10563.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2750	2750	2750	2750	2750	
5°	2750	2738	2705	2728	2720	261
15°	2616	2588	2504	2456	2432	737
25°	2374	2295	2130	2028	1991	1092
35°	2046	1919	1700	1543	1488	1281
45°	1672	1506	1244	1068	1008	1292
55°	1272	1078	809	660	612	1136
65°	859	657	433	349	341	851
75°	458	284	199	182	179	484
85°	107	55	47	47	47	123
90°	2	19	52	49	50	10
95°	77	92	95	95	92	86
105°	318	322	326	328	328	336
115°	592	601	598	596	592	586
125°	861	874	870	866	864	770
135°	1114	1130	1134	1132	1128	861
145°	1352	1363	1371	1373	1367	845
155°	1546	1551	1555	1563	1558	712
165°	1682	1681	1681	1691	1684	475
175°	1751	1746	1743	1754	1745	166
180°	1754	1754	1754	1754	1754	



TEST NUMBER: P911126

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2750.1	2750.1	2750.1	2750.1	2750.1
2.5°	2762.5	2750.1	2722.6	2747.7	2742.7
5°	2750.1	2737.7	2705.2	2727.7	2720.3
7.5°	2727.7	2712.8	2678.0	2687.8	2675.4
10°	2697.8	2680.3	2630.8	2623.1	2608.3
12.5°	2660.6	2638.1	2570.8	2556.0	2528.5
15°	2615.7	2588.2	2503.7	2456.4	2431.6
17.5°	2563.5	2523.5	2419.0	2364.3	2324.5
20°	2503.7	2453.8	2329.5	2267.4	2212.5
22.5°	2439.0	2381.7	2237.3	2152.8	2115.5
25°	2374.4	2294.6	2130.4	2028.5	1991.0
27.5°	2297.3	2212.5	2030.8	1913.8	1856.6
30°	2215.1	2120.3	1921.2	1794.5	1727.2
32.5°	2135.4	2020.8	1817.0	1667.5	1605.2
35°	2045.9	1918.9	1700.0	1543.1	1488.2
37.5°	1958.7	1821.6	1590.4	1418.5	1356.4
40°	1866.6	1717.4	1475.7	1299.1	1234.4
42.5°	1772.1	1612.8	1361.4	1177.1	1115.1
45°	1672.5	1505.6	1244.5	1067.5	1007.9
47.5°	1578.0	1401.3	1132.5	955.6	901.0
50°	1473.4	1296.8	1022.9	851.0	799.0
52.5°	1371.2	1184.5	918.4	754.1	706.9
55°	1271.7	1077.6	808.8	659.6	612.3
57.5°	1169.8	970.6	711.9	572.5	532.5
60°	1065.2	866.1	609.7	483.0	443.0
62.5°	963.3	764.2	522.6	403.2	383.4
65°	858.7	657.0	433.1	348.6	340.9
67.5°	759.1	557.4	348.6	306.1	298.7
70°	654.5	460.5	288.6	263.8	253.7
72.5°	555.1	370.7	241.3	221.6	216.5
75°	457.9	283.6	199.1	181.7	179.3
77.5°	361.0	201.5	156.8	146.8	141.8
80°	271.2	144.4	119.3	109.6	109.6
82.5°	189.1	97.1	82.1	77.1	77.1
85°	106.9	54.7	47.2	47.2	47.2
87.5°	39.9	19.9	19.9	17.4	17.4
90°	1.6	19.1	51.8	48.7	50.2
92.5°	32.8	44.4	46.0	47.6	47.6
95°	77.2	92.0	94.6	94.6	92.0
97.5°	128.4	142.2	148.1	148.1	148.1
100°	187.6	199.8	204.1	204.1	202.5
102.5°	250.1	259.1	264.8	266.5	264.8
105°	318.3	322.5	325.7	328.3	328.3
107.5°	385.9	392.3	392.3	393.4	385.9
110°	451.5	460.0	460.0	460.0	455.7



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	522.3	531.3	529.8	525.6	522.3
115°	592.1	600.6	598.0	596.4	592.1
117.5°	661.4	673.1	665.6	661.4	657.2
120°	731.2	742.8	731.2	731.2	726.4
122.5°	794.6	809.5	802.0	797.8	794.6
125°	861.2	874.4	870.2	865.5	863.9
127.5°	926.2	942.6	936.9	930.5	926.2
130°	987.1	1006.1	1003.4	1000.3	994.4
132.5°	1055.3	1070.1	1071.2	1063.8	1059.5
135°	1114.0	1130.3	1133.5	1132.0	1127.7
137.5°	1179.5	1192.7	1195.4	1194.3	1188.0
140°	1237.1	1250.4	1257.7	1257.7	1252.0
142.5°	1296.3	1309.6	1313.8	1315.4	1309.6
145°	1352.4	1363.0	1371.4	1373.1	1367.2
147.5°	1402.7	1415.9	1422.2	1424.8	1419.0
150°	1454.5	1463.4	1469.2	1474.0	1469.2
152.5°	1500.5	1509.5	1516.8	1522.7	1516.8
155°	1546.4	1550.6	1555.4	1562.8	1558.0
157.5°	1586.1	1589.2	1591.9	1602.5	1595.1
160°	1621.5	1624.7	1626.2	1635.2	1628.9
162.5°	1654.3	1654.3	1655.8	1665.9	1658.5
165°	1682.4	1680.7	1680.7	1691.3	1683.9
167.5°	1707.6	1702.9	1702.9	1713.5	1706.1
170°	1726.7	1722.5	1720.9	1731.5	1722.5
172.5°	1739.9	1735.7	1734.1	1744.7	1735.7
175°	1750.6	1746.2	1743.1	1753.7	1744.7
177.5°	1756.3	1752.1	1748.9	1757.9	1748.9
180°	1753.7	1753.7	1753.7	1753.7	1753.7



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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	13.56	14.42	14.49	15.36	16.59	9.53	10.39	10.46	11.33	12.55
	3H	15.22	15.99	16.16	16.94	18.19	10.70	11.47	11.65	12.42	13.67
	4H	15.81	16.54	16.77	17.50	18.75	11.14	11.87	12.10	12.83	14.08
	6H	16.22	16.89	17.19	17.85	19.12	11.45	12.12	12.42	13.08	14.35
	8H	16.34	16.98	17.32	17.96	19.22	11.53	12.17	12.51	13.15	14.41
	12H	16.39	17.00	17.37	17.97	19.26	11.57	12.17	12.55	13.15	14.44
4H	2H	13.58	14.30	14.54	15.26	16.52	10.11	10.84	11.08	11.80	13.06
	3H	15.38	15.99	16.36	16.98	18.25	11.45	12.05	12.42	13.04	14.31
	4H	16.06	16.61	17.04	17.60	18.89	11.98	12.53	12.97	13.52	14.81
	6H	16.56	17.03	17.55	18.04	19.33	12.39	12.86	13.38	13.87	15.16
	8H	16.72	17.17	17.72	18.17	19.47	12.50	12.95	13.50	13.95	15.25
	12H	16.81	17.21	17.82	18.22	19.53	12.56	12.96	13.58	13.98	15.29
8H	4H	16.03	16.47	17.02	17.47	18.77	12.25	12.70	13.25	13.69	15.00
	6H	16.57	16.94	17.59	17.98	19.28	12.75	13.11	13.77	14.16	15.46
	8H	16.78	17.10	17.80	18.13	19.45	12.93	13.25	13.96	14.28	15.60
	12H	16.90	17.18	17.93	18.21	19.57	13.03	13.32	14.06	14.34	15.71
12H	4H	15.98	16.38	16.99	17.39	18.70	12.26	12.65	13.27	13.67	14.98
	6H	16.55	16.87	17.58	17.90	19.22	12.79	13.12	13.82	14.14	15.47
	8H	16.75	17.04	17.79	18.06	19.43	12.99	13.27	14.02	14.29	15.66