

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: P911314

Luminaire Tested: DFN2DIP-PN3F0-090D060US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911314
REPORT IS A COMBINATION OF REPORTS P899566 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-090D060US850-RLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

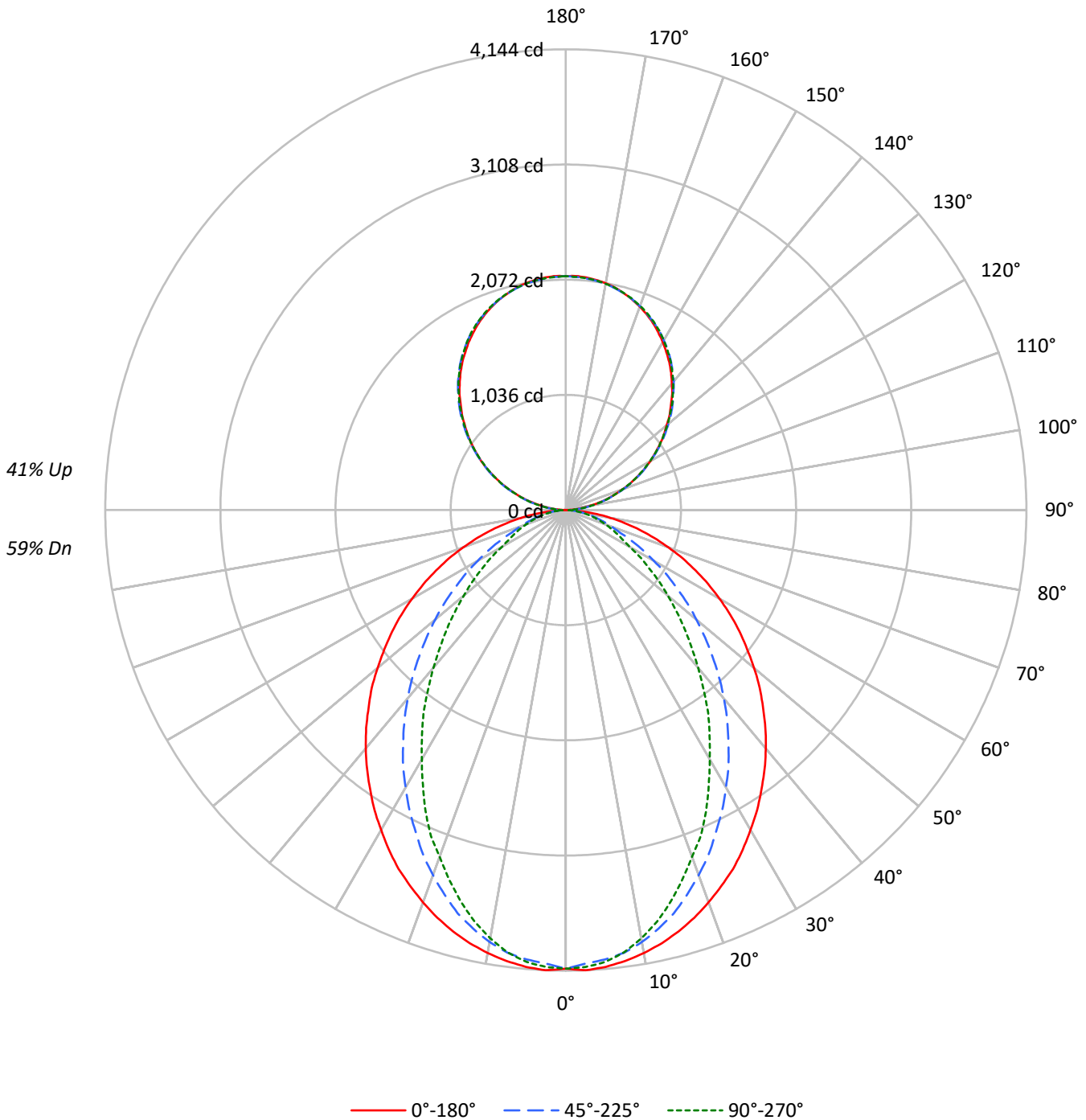
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14372.7 lumens
Efficiency: N/A
Efficacy: 103.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 139
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64	59			
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56	51			
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	52	50	48	44			
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	44	41	38			
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36	33			
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32	29			
6	66	54	46	40	61	51	44	39	45	39	35	40	35	32	35	31	28	26			
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25	23			
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23	21			
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21	19			
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19	17			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4822	4822	4822
5°	4827	4742	4774
10°	4776	4646	4617
15°	4708	4489	4375
20°	4618	4274	4078
25°	4526	4034	3792
30°	4403	3788	3430
35°	4283	3524	3112
40°	4160	3251	2748
45°	4018	2949	2418
50°	3871	2644	2095
55°	3717	2318	1786
60°	3538	1979	1468
65°	3333	1633	1319
70°	3084	1312	1190
75°	2770	1149	1078
80°	2316	953	929
85°	1573	620	686

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4018 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	386.6	2.7
10°-20°	1061.3	7.4
20°-30°	1490.1	10.4
30°-40°	1624.3	11.3
40°-50°	1492.9	10.4
50°-60°	1172.4	8.2
60°-70°	763.1	5.3
70°-80°	392.8	2.7
80°-90°	106.3	0.7
90°-100°	130.2	0.9
100°-110°	413.7	2.9
110°-120°	708.0	4.9
120°-130°	931.2	6.5
130°-140°	1045.3	7.3
140°-150°	1025.0	7.1
150°-160°	859.8	6.0
160°-170°	570.2	4.0
170°-180°	199.3	1.4
0°-30°	2938.0	20.4
0°-40°	4562.3	31.7
0°-60°	7227.6	50.3
0°-90°	8489.9	59.1
90°-120°	1252.0	8.7
90°-150°	4253.5	29.6
90°-180°	5883.0	40.9
0°-180°	14372.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4125	4125	4125	4125	4125	
5°	4125	4106	4058	4091	4080	391
15°	3924	3882	3756	3685	3648	1106
25°	3562	3442	3196	3043	2986	1638
35°	3069	2878	2550	2315	2232	1921
45°	2509	2258	1867	1601	1512	1937
55°	1908	1616	1213	989	918	1705
65°	1288	986	650	523	511	1277
75°	687	425	299	272	269	726
85°	160	82	71	71	71	184
90°	2	23	62	58	60	14
95°	93	110	114	114	110	103
105°	382	387	391	394	394	403
115°	710	721	718	716	710	703
125°	1034	1049	1044	1039	1037	924
135°	1337	1356	1360	1358	1353	1033
145°	1623	1636	1646	1648	1641	1014
155°	1856	1861	1866	1875	1870	854
165°	2019	2017	2017	2030	2021	569
175°	2101	2096	2092	2104	2094	200
180°	2104	2104	2104	2104	2104	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4125.1	4125.1	4125.1	4125.1	4125.1
2.5°	4143.8	4125.1	4083.9	4121.6	4114.1
5°	4125.1	4106.5	4057.8	4091.4	4080.3
7.5°	4091.4	4069.3	4017.0	4031.7	4013.0
10°	4046.7	4020.6	3946.2	3934.6	3912.4
12.5°	3990.8	3957.2	3856.2	3834.0	3792.8
15°	3923.5	3882.4	3755.6	3684.7	3647.5
17.5°	3845.1	3785.3	3628.4	3546.5	3486.7
20°	3755.6	3680.8	3494.1	3401.1	3318.7
22.5°	3658.6	3572.6	3355.9	3229.2	3173.4
25°	3561.6	3441.9	3195.6	3042.7	2986.4
27.5°	3445.9	3318.7	3046.2	2870.8	2784.8
30°	3322.7	3180.5	2881.8	2691.8	2590.7
32.5°	3203.0	3031.1	2725.4	2501.2	2407.7
35°	3068.8	2878.3	2549.9	2314.7	2232.3
37.5°	2938.1	2732.6	2385.6	2127.7	2034.7
40°	2799.9	2576.1	2213.7	1948.7	1851.7
42.5°	2658.1	2419.3	2042.1	1765.7	1672.6
45°	2508.8	2258.5	1866.7	1601.3	1511.8
47.5°	2366.9	2102.0	1698.8	1433.4	1351.4
50°	2210.1	1945.1	1534.4	1276.6	1198.5
52.5°	2056.9	1776.8	1377.6	1131.2	1060.3
55°	1907.5	1616.4	1213.1	989.4	918.5
57.5°	1754.7	1456.0	1067.9	858.7	798.9
60°	1597.7	1299.1	914.6	724.4	664.6
62.5°	1444.9	1146.3	783.8	604.8	575.1
65°	1288.0	985.5	649.5	522.8	511.4
67.5°	1138.7	836.1	522.8	459.0	447.9
70°	981.9	690.8	433.0	395.7	380.6
72.5°	832.5	556.1	362.0	332.3	324.8
75°	686.8	425.4	298.7	272.5	268.9
77.5°	541.4	302.2	235.2	220.2	212.7
80°	406.8	216.7	179.0	164.4	164.4
82.5°	283.6	145.7	123.2	115.7	115.7
85°	160.4	82.0	70.9	70.9	70.9
87.5°	59.8	29.7	29.7	26.2	26.2
90°	1.9	22.8	62.2	58.3	60.2
92.5°	39.4	53.3	55.2	57.1	57.1
95°	92.6	110.3	113.6	113.6	110.3
97.5°	154.2	170.7	177.7	177.7	177.7
100°	225.2	239.8	244.9	244.9	243.0
102.5°	300.1	310.9	317.8	319.7	317.8
105°	381.9	387.0	390.8	394.0	394.0
107.5°	463.1	470.8	470.8	472.0	463.1
110°	541.9	551.9	551.9	551.9	546.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	626.8	637.6	635.7	630.6	626.8
115°	710.5	720.7	717.5	715.6	710.5
117.5°	793.7	807.7	798.7	793.7	788.6
120°	877.4	891.4	877.4	877.4	871.7
122.5°	953.5	971.3	962.4	957.4	953.5
125°	1033.5	1049.3	1044.2	1038.6	1036.7
127.5°	1111.6	1131.2	1124.2	1116.7	1111.6
130°	1184.5	1207.4	1204.2	1200.4	1193.4
132.5°	1266.4	1284.1	1285.3	1276.5	1271.4
135°	1336.8	1356.4	1360.2	1358.3	1353.2
137.5°	1415.4	1431.3	1434.5	1433.2	1425.6
140°	1484.6	1500.5	1509.3	1509.3	1502.4
142.5°	1555.6	1571.5	1576.6	1578.4	1571.5
145°	1622.9	1635.6	1645.8	1647.6	1640.7
147.5°	1683.1	1699.0	1706.6	1709.7	1702.8
150°	1745.3	1756.1	1763.1	1768.7	1763.1
152.5°	1800.5	1811.3	1820.2	1827.2	1820.2
155°	1855.7	1860.8	1866.4	1875.4	1869.7
157.5°	1903.3	1907.1	1910.3	1923.0	1914.1
160°	1945.9	1949.6	1951.5	1962.3	1954.7
162.5°	1985.1	1985.1	1987.0	1999.1	1990.2
165°	2018.7	2016.8	2016.8	2029.6	2020.7
167.5°	2049.2	2043.6	2043.6	2056.2	2047.3
170°	2072.1	2067.0	2065.1	2077.7	2067.0
172.5°	2087.9	2082.8	2080.9	2093.6	2082.8
175°	2100.6	2095.6	2091.7	2104.4	2093.6
177.5°	2107.5	2102.6	2098.7	2109.4	2098.7
180°	2104.4	2104.4	2104.4	2104.4	2104.4



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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	13.38	14.29	14.26	15.19	16.33	9.35	10.26	10.23	11.15	12.29
	3H	15.06	15.87	15.95	16.78	17.94	10.53	11.35	11.43	12.26	13.42
	4H	15.67	16.43	16.58	17.35	18.52	10.98	11.75	11.90	12.67	13.84
	6H	16.09	16.79	17.01	17.71	18.90	11.30	12.01	12.23	12.93	14.12
	8H	16.21	16.89	17.14	17.82	19.01	11.39	12.07	12.32	13.00	14.19
	12H	16.27	16.91	17.21	17.85	19.06	11.44	12.08	12.37	13.01	14.22
4H	2H	13.41	14.17	14.32	15.09	16.26	9.95	10.72	10.86	11.63	12.80
	3H	15.24	15.87	16.16	16.82	18.01	11.30	11.94	12.22	12.88	14.07
	4H	15.93	16.51	16.86	17.45	18.66	11.84	12.43	12.78	13.37	14.58
	6H	16.44	16.94	17.39	17.90	19.12	12.26	12.76	13.21	13.73	14.94
	8H	16.61	17.08	17.57	18.04	19.27	12.39	12.86	13.34	13.81	15.04
	12H	16.71	17.13	17.68	18.10	19.34	12.45	12.87	13.42	13.85	15.08
8H	4H	15.90	16.37	16.85	17.32	18.55	12.13	12.59	13.08	13.55	14.78
	6H	16.46	16.85	17.44	17.85	19.07	12.64	13.03	13.62	14.02	15.25
	8H	16.67	17.01	17.66	18.00	19.25	12.83	13.17	13.81	14.16	15.40
	12H	16.81	17.11	17.80	18.09	19.38	12.94	13.24	13.93	14.23	15.52
12H	4H	15.85	16.27	16.82	17.25	18.48	12.13	12.56	13.10	13.53	14.76
	6H	16.44	16.78	17.42	17.77	19.01	12.69	13.03	13.67	14.02	15.26
	8H	16.66	16.96	17.64	17.94	19.23	12.90	13.20	13.89	14.18	15.47