

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: P911514

Luminaire Tested: DFN2DIP-PN4F0-090D050US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911514
REPORT IS A COMBINATION OF REPORTS P899638 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-090D050US850-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

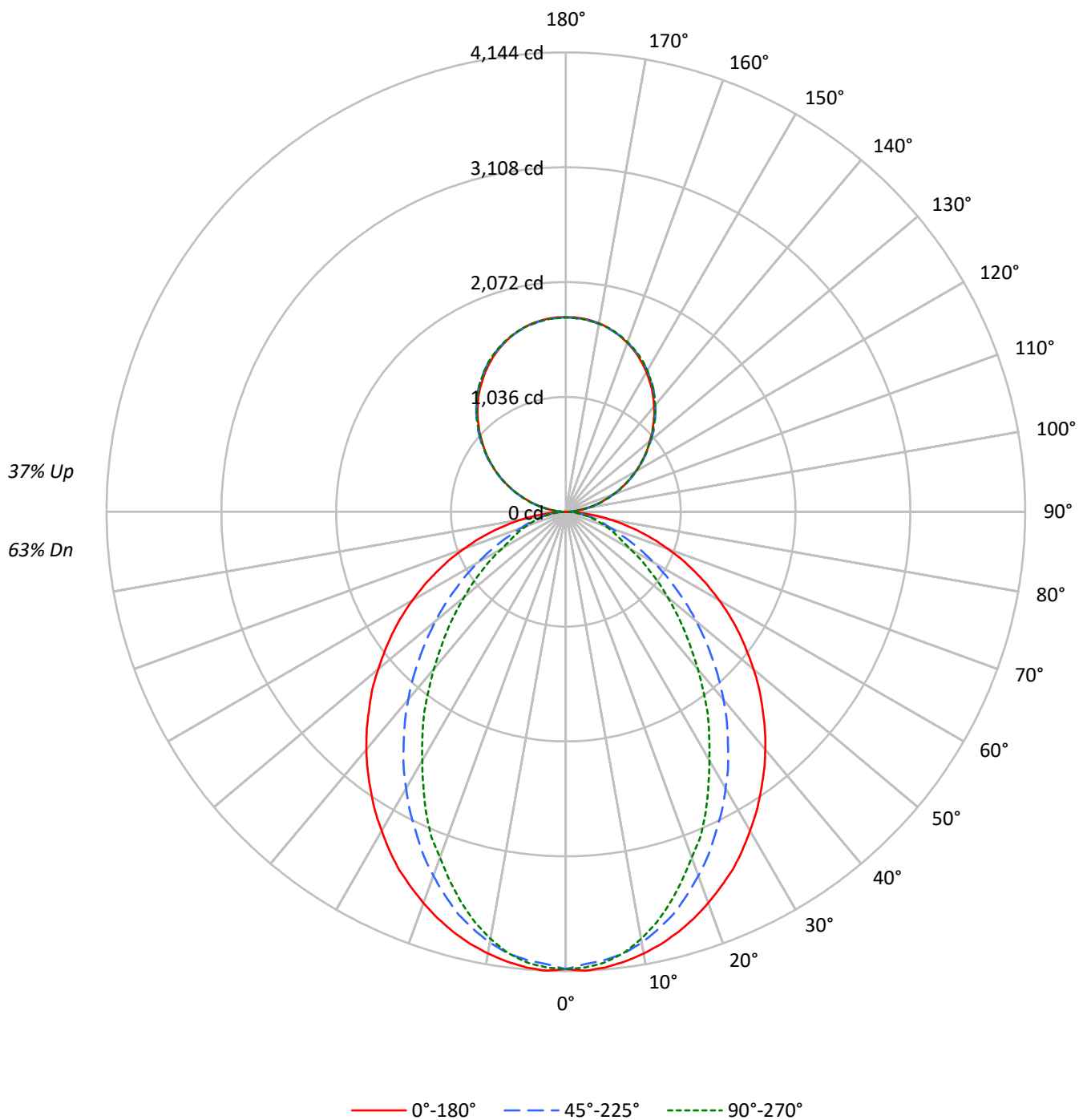
Lumens per Lamp: N/A
Luminaire Lumens: 13391.2 lumens
Efficiency: N/A
Efficacy: 106.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 126
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P911514

CATALOG NUMBER: DFN2DIP-PN4F0-090D050US850-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P911514

CATALOG NUMBER: DFN2DIP-PN4F0-090D050US850-RLLFLL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	110	110	110	110	104	104	104	104	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	81	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	53	51
3	85	76	69	63	80	72	65	60	64	59	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	68	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	47	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	37	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	28	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3011	3011	3011
5°	3016	2964	2983
10°	2986	2906	2886
15°	2945	2810	2737
20°	2891	2678	2553
25°	2835	2530	2376
30°	2760	2378	2151
35°	2687	2215	1953
40°	2612	2046	1726
45°	2526	1859	1520
50°	2436	1669	1319
55°	2343	1467	1126
60°	2234	1255	927
65°	2110	1040	835
70°	1959	839	757
75°	1769	741	690
80°	1495	622	600
85°	1041	418	455

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2526 cd/sqm

TEST NUMBER: P911514

CATALOG NUMBER: DFN2DIP-PN4F0-090D050US850-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	386.6	2.9
10°-20°	1061.3	7.9
20°-30°	1490.1	11.1
30°-40°	1624.3	12.1
40°-50°	1492.9	11.1
50°-60°	1172.4	8.8
60°-70°	763.1	5.7
70°-80°	392.8	2.9
80°-90°	105.3	0.8
90°-100°	108.5	0.8
100°-110°	344.8	2.6
110°-120°	590.1	4.4
120°-130°	776.0	5.8
130°-140°	871.0	6.5
140°-150°	854.2	6.4
150°-160°	716.5	5.4
160°-170°	475.2	3.5
170°-180°	166.1	1.2
0°-30°	2938.0	21.9
0°-40°	4562.3	34.1
0°-60°	7227.6	54.0
0°-90°	8488.9	63.4
90°-120°	1043.4	7.8
90°-150°	3544.6	26.5
90°-180°	4902.0	36.6
0°-180°	13391.2	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	19	52	49	50	13
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: P911514

CATALOG NUMBER: DFN2DIP-PN4F0-090D050US850-RLFL

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°	1.6	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



TEST NUMBER: P911514

CATALOG NUMBER: DFN2DIP-PN4F0-090D050US850-RLLFLL

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

TEST NUMBER: P911514

CATALOG NUMBER: DFN2DIP-PN4F0-090D050US850-RLFL

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	12.15	13.10	12.99	13.96	15.03	8.11	9.07	8.95	9.92	10.99
	3H	13.84	14.69	14.69	15.56	16.66	9.31	10.17	10.17	11.03	12.13
	4H	14.46	15.26	15.33	16.13	17.24	9.77	10.57	10.64	11.45	12.55
	6H	14.89	15.63	15.77	16.51	17.63	10.10	10.84	10.98	11.72	12.84
	8H	15.02	15.72	15.91	16.62	17.74	10.19	10.90	11.08	11.79	12.91
	12H	15.08	15.75	15.98	16.65	17.79	10.24	10.91	11.13	11.80	12.95
4H	2H	12.18	12.99	13.06	13.86	14.97	8.73	9.53	9.60	10.40	11.51
	3H	14.03	14.69	14.91	15.60	16.72	10.09	10.76	10.97	11.66	12.78
	4H	14.73	15.33	15.62	16.24	17.38	10.64	11.25	11.54	12.15	13.30
	6H	15.25	15.77	16.16	16.70	17.85	11.07	11.59	11.98	12.52	13.67
	8H	15.43	15.92	16.34	16.84	18.00	11.20	11.69	12.11	12.61	13.77
	12H	15.53	15.97	16.46	16.91	18.08	11.27	11.71	12.20	12.65	13.82
8H	4H	14.70	15.19	15.62	16.11	17.28	10.93	11.42	11.85	12.34	13.51
	6H	15.28	15.68	16.22	16.64	17.81	11.46	11.86	12.40	12.82	13.99
	8H	15.49	15.85	16.45	16.81	17.99	11.65	12.01	12.60	12.96	14.14
	12H	15.64	15.96	16.59	16.90	18.13	11.77	12.09	12.73	13.04	14.27
12H	4H	14.66	15.10	15.59	16.04	17.21	10.94	11.38	11.88	12.32	13.49
	6H	15.25	15.61	16.20	16.56	17.74	11.51	11.87	12.46	12.82	14.00
	8H	15.48	15.79	16.43	16.74	17.97	11.72	12.04	12.68	12.99	14.22