

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: P914231

Luminaire Tested: DFN2DIP-PN4F0-080D110US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914231
REPORT IS A COMBINATION OF REPORTS P901264 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-080D110US927-RLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

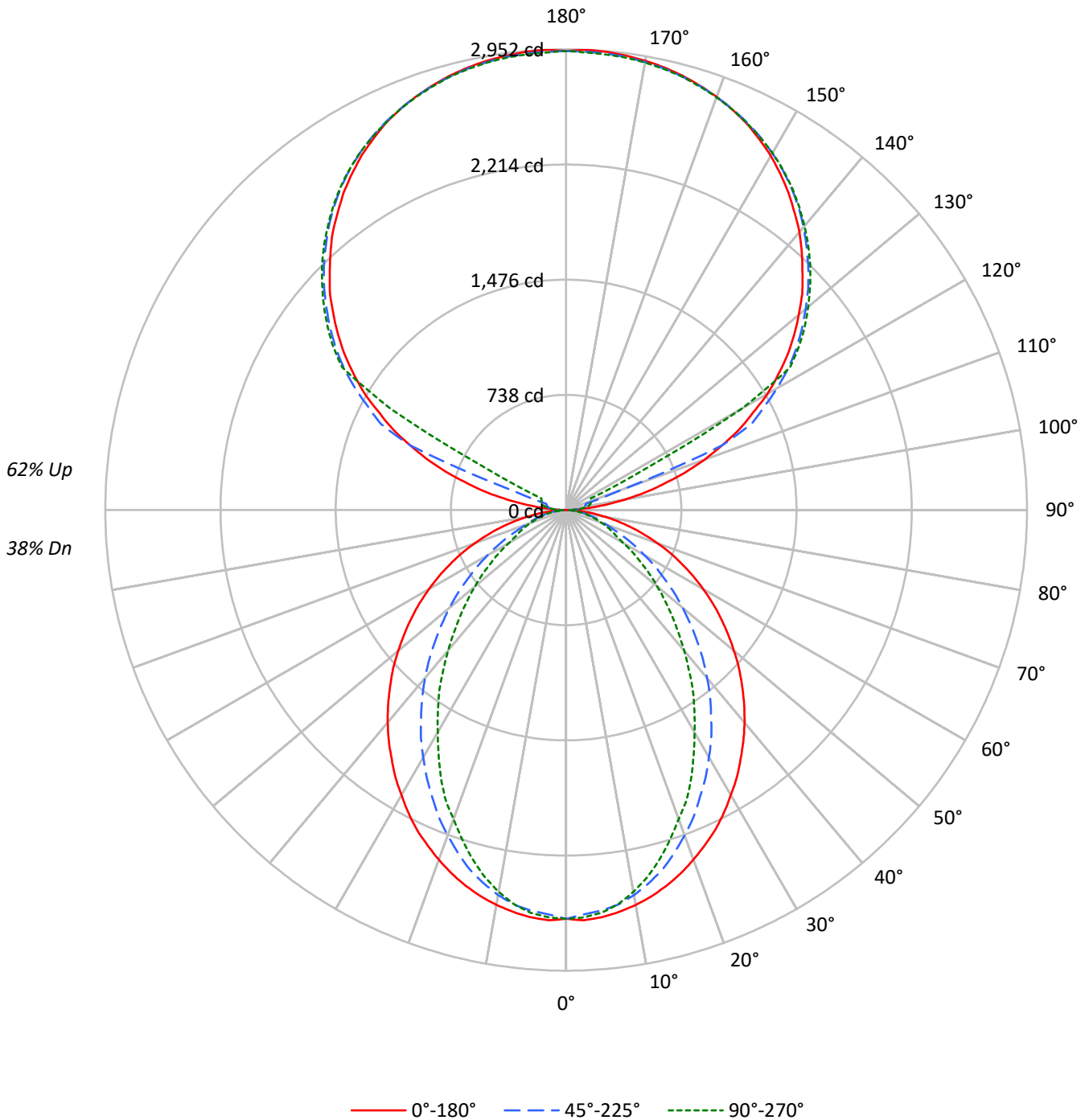
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14013.6 lumens
Efficiency: N/A
Efficacy: 83.0 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-Indirect

Input Watts (W): 168.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
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	104	104	104	104	95	95	95	95	77	77	77	61	61	61	46	46	46	38			
1	96	91	88	84	87	83	80	77	68	66	64	54	52	51	41	40	39	33			
2	87	80	74	70	79	73	68	64	60	56	53	48	45	43	36	35	34	28			
3	80	71	64	58	72	65	59	54	53	49	45	42	39	37	33	31	29	24			
4	73	63	55	50	66	58	51	46	47	43	39	38	35	32	29	27	25	21			
5	67	56	48	43	61	51	45	40	43	38	34	34	31	28	27	24	22	19			
6	62	50	43	37	56	46	39	35	38	33	30	31	27	25	24	22	20	17			
7	57	46	38	33	52	42	35	30	35	30	26	28	25	22	22	20	18	15			
8	53	41	34	29	48	38	32	27	32	27	23	26	22	20	20	18	16	13			
9	50	38	31	26	45	35	28	24	29	24	21	24	20	18	19	16	14	12			
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13	11			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1912	1912	1912
5°	1915	1882	1894
10°	1896	1845	1833
15°	1870	1784	1738
20°	1835	1701	1621
25°	1800	1607	1508
30°	1753	1510	1365
35°	1706	1407	1240
40°	1659	1299	1096
45°	1604	1180	965
50°	1547	1060	838
55°	1487	931	715
60°	1419	797	589
65°	1340	660	530
70°	1244	533	481
75°	1123	470	438
80°	949	395	381
85°	661	265	289

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1604 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	245.5	1.8
10°-20°	673.9	4.8
20°-30°	946.1	6.8
30°-40°	1031.3	7.4
40°-50°	947.9	6.8
50°-60°	744.4	5.3
60°-70°	484.5	3.5
70°-80°	249.4	1.8
80°-90°	68.8	0.5
90°-100°	97.0	0.7
100°-110°	361.5	2.6
110°-120°	958.7	6.8
120°-130°	1590.2	11.3
130°-140°	1689.1	12.1
140°-150°	1569.9	11.2
150°-160°	1262.1	9.0
160°-170°	813.3	5.8
170°-180°	279.9	2.0
0°-30°	1865.5	13.3
0°-40°	2896.8	20.7
0°-60°	4589.2	32.7
0°-90°	5392.0	38.5
90°-120°	1417.2	10.1
90°-150°	6266.3	44.7
90°-180°	8622.0	61.5
0°-180°	14013.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2619	2619	2619	2619	2619	
5°	2619	2608	2576	2598	2591	248
15°	2491	2465	2385	2340	2316	702
25°	2261	2186	2029	1932	1896	1040
35°	1948	1828	1619	1470	1417	1220
45°	1593	1434	1185	1017	960	1230
55°	1211	1026	770	628	583	1082
65°	818	626	412	332	325	811
75°	436	270	190	173	171	461
85°	102	52	45	45	45	117
90°	2	26	42	53	57	13
95°	138	68	83	94	92	164
105°	647	711	130	153	162	691
115°	1224	1260	1313	328	175	1205
125°	1730	1758	1798	1813	1819	1543
135°	2141	2175	2194	2215	2211	1654
145°	2484	2481	2517	2532	2522	1553
155°	2734	2715	2741	2754	2737	1260
165°	2881	2869	2875	2890	2875	814
175°	2947	2932	2936	2952	2930	280
180°	2941	2941	2941	2941	2941	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2619.3	2619.3	2619.3	2619.3	2619.3
2.5°	2631.1	2619.3	2593.1	2617.0	2612.2
5°	2619.3	2607.5	2576.5	2597.9	2590.8
7.5°	2597.9	2583.8	2550.6	2559.9	2548.1
10°	2569.4	2552.9	2505.6	2498.3	2484.2
12.5°	2534.0	2512.6	2448.5	2434.4	2408.2
15°	2491.3	2465.1	2384.6	2339.6	2315.9
17.5°	2441.4	2403.5	2303.9	2251.9	2213.8
20°	2384.6	2337.1	2218.7	2159.6	2107.2
22.5°	2323.0	2268.4	2130.9	2050.4	2014.9
25°	2261.4	2185.5	2029.0	1932.0	1896.2
27.5°	2187.9	2107.2	1934.2	1822.8	1768.2
30°	2109.7	2019.4	1829.9	1709.1	1645.0
32.5°	2033.8	1924.7	1730.5	1588.2	1528.8
35°	1948.5	1827.6	1619.1	1469.7	1417.4
37.5°	1865.5	1735.0	1514.7	1351.0	1291.9
40°	1777.8	1635.7	1405.6	1237.3	1175.7
42.5°	1687.7	1536.1	1296.6	1121.2	1062.0
45°	1592.9	1434.0	1185.3	1016.8	960.0
47.5°	1502.9	1334.7	1078.6	910.1	858.1
50°	1403.3	1235.1	974.3	810.6	761.0
52.5°	1306.0	1128.1	874.6	718.3	673.3
55°	1211.2	1026.3	770.3	628.2	583.2
57.5°	1114.1	924.5	678.0	545.3	507.2
60°	1014.5	824.9	580.7	459.9	422.0
62.5°	917.4	727.8	497.7	384.0	365.2
65°	817.8	625.7	412.4	332.0	324.6
67.5°	723.0	530.9	332.0	291.4	284.5
70°	623.4	438.6	274.9	251.2	241.7
72.5°	528.6	353.1	229.9	211.0	206.2
75°	436.1	270.1	189.6	173.0	170.8
77.5°	343.8	191.9	149.4	139.8	135.1
80°	258.3	137.6	113.7	104.3	104.3
82.5°	180.1	92.5	78.2	73.4	73.4
85°	101.9	52.0	45.0	45.0	45.0
87.5°	37.9	18.9	18.9	16.6	16.6
90°	2.1	25.5	42.5	53.3	57.4
92.5°	53.3	44.8	51.0	55.4	57.4
95°	138.2	68.0	82.9	93.7	91.5
97.5°	248.9	74.5	108.4	114.9	117.0
100°	376.8	85.2	121.3	138.2	142.5
102.5°	517.0	512.9	125.6	148.9	155.4
105°	646.9	710.8	129.9	153.1	161.8
107.5°	798.0	851.0	134.2	157.4	166.0
110°	942.8	987.3	372.5	159.7	168.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1079.0	1117.1	1081.0	163.7	170.3
115°	1223.5	1259.6	1313.0	327.7	174.6
117.5°	1349.2	1391.6	1428.0	1123.5	566.0
120°	1489.6	1521.5	1559.9	1585.4	1298.1
122.5°	1608.7	1642.7	1685.4	1698.1	1700.4
125°	1730.0	1757.8	1798.2	1813.1	1819.4
127.5°	1840.6	1870.4	1902.5	1923.7	1925.8
130°	1945.0	1979.1	2002.3	2025.8	2023.9
132.5°	2051.4	2079.2	2102.4	2121.6	2119.6
135°	2140.9	2174.9	2193.9	2215.4	2211.1
137.5°	2234.3	2259.9	2281.3	2302.6	2296.2
140°	2325.8	2343.0	2366.2	2385.4	2374.8
142.5°	2402.6	2417.5	2445.1	2462.0	2451.4
145°	2483.5	2481.2	2517.3	2532.3	2521.7
147.5°	2553.5	2547.2	2583.3	2593.9	2585.6
150°	2621.7	2606.8	2640.9	2653.6	2643.0
152.5°	2679.1	2662.1	2694.0	2706.9	2692.0
155°	2734.5	2715.4	2740.9	2753.6	2736.7
157.5°	2779.1	2762.2	2781.4	2796.3	2779.1
160°	2817.6	2804.6	2817.6	2830.1	2815.3
162.5°	2851.4	2838.8	2849.4	2864.3	2845.1
165°	2881.2	2868.6	2874.9	2889.8	2874.9
167.5°	2904.7	2891.9	2898.4	2913.3	2894.2
170°	2923.9	2911.0	2915.3	2930.3	2911.0
172.5°	2936.5	2923.9	2928.2	2943.1	2923.9
175°	2947.2	2932.3	2936.5	2951.5	2930.3
177.5°	2951.5	2936.5	2938.8	2953.7	2934.6
180°	2940.9	2940.9	2940.9	2940.9	2940.9



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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	8.23	8.97	9.28	10.03	11.45	4.19	4.94	5.25	5.99	7.42
	3H	9.90	10.56	10.96	11.63	13.08	5.37	6.04	6.44	7.10	8.55
	4H	10.51	11.14	11.58	12.20	13.66	5.82	6.45	6.90	7.52	8.97
	6H	10.93	11.51	12.01	12.58	14.04	6.14	6.72	7.22	7.79	9.25
	8H	11.05	11.60	12.14	12.69	14.15	6.23	6.78	7.32	7.86	9.32
	12H	11.11	11.63	12.21	12.71	14.20	6.27	6.79	7.36	7.87	9.35
4H	2H	8.23	8.86	9.32	9.93	11.38	4.78	5.41	5.86	6.47	7.93
	3H	10.06	10.58	11.15	11.68	13.14	6.12	6.64	7.21	7.74	9.21
	4H	10.75	11.23	11.84	12.31	13.80	6.67	7.15	7.76	8.23	9.72
	6H	11.26	11.67	12.37	12.78	14.26	7.08	7.49	8.18	8.60	10.08
	8H	11.44	11.82	12.54	12.92	14.42	7.21	7.59	8.31	8.69	10.19
	12H	11.53	11.88	12.65	12.99	14.49	7.27	7.62	8.39	8.73	10.23
8H	4H	10.71	11.09	11.81	12.19	13.69	6.94	7.33	8.04	8.42	9.92
	6H	11.28	11.59	12.40	12.74	14.23	7.46	7.77	8.58	8.92	10.41
	8H	11.49	11.77	12.63	12.89	14.41	7.65	7.93	8.78	9.05	10.56
	12H	11.63	11.88	12.77	12.99	14.55	7.76	8.01	8.90	9.13	10.68
12H	4H	10.66	11.01	11.78	12.12	13.62	6.94	7.29	8.06	8.40	9.90
	6H	11.25	11.53	12.38	12.65	14.17	7.51	7.78	8.64	8.91	10.42
	8H	11.47	11.71	12.61	12.83	14.38	7.71	7.96	8.85	9.08	10.63