

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: P906469

Luminaire Tested: DFN2DIP-SQ3F0-070D090US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906469
REPORT IS A COMBINATION OF REPORTS P901477 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-070D090US835-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

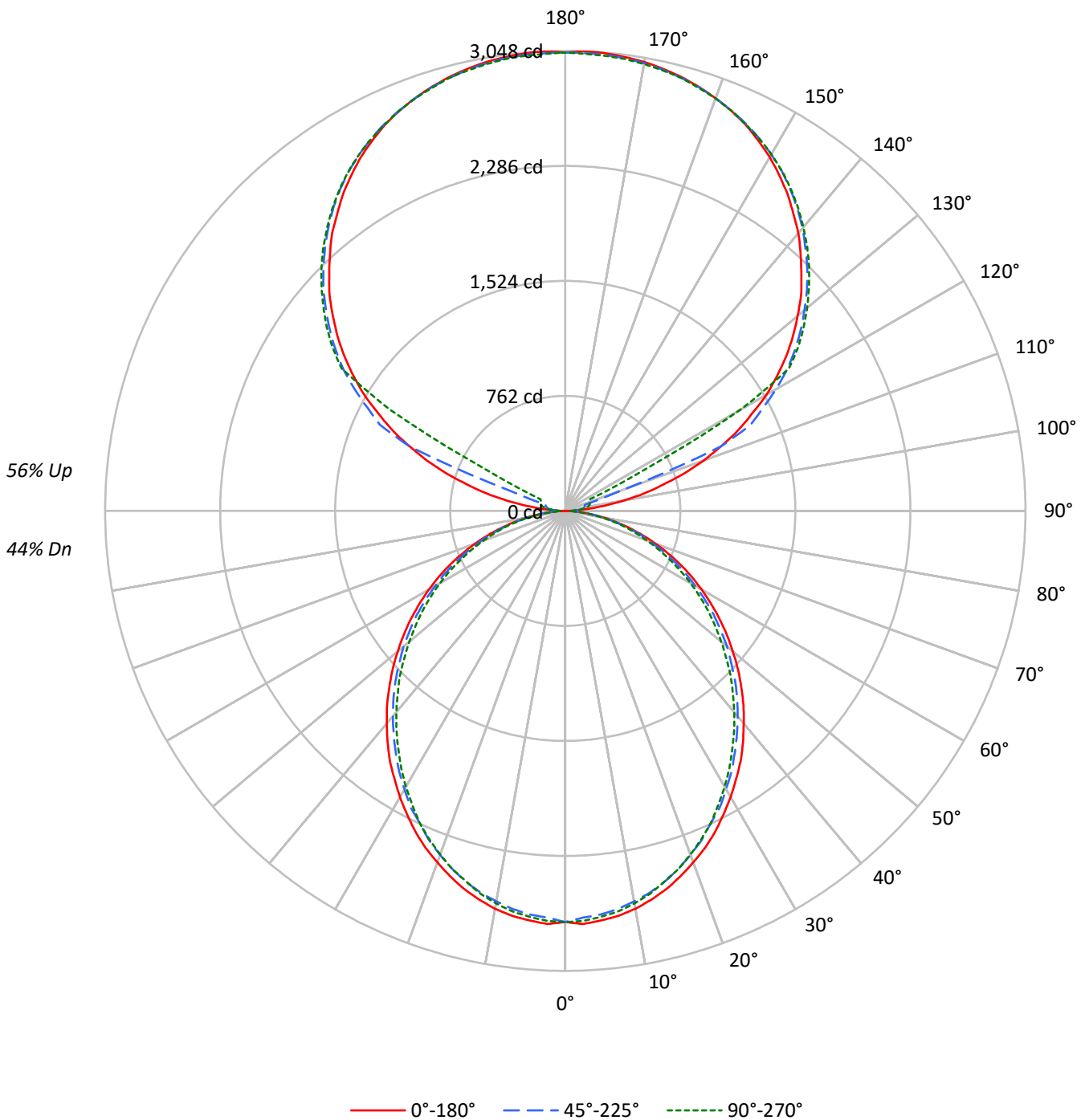
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15840.0 lumens
Efficiency: N/A
Efficacy: 118.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 134.1
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

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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	50	30	10	0														
RCR																																						
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	50	50	50	44						44														
1	96	92	88	85	88	84	81	78	70	68	66	57	55	54	45	44	43	37						37														
2	88	80	74	69	80	74	69	64	61	58	54	50	47	45	39	37	36	31						31														
3	80	71	63	58	73	65	59	54	54	49	46	44	41	38	35	32	31	26						26														
4	73	63	55	49	67	58	51	45	48	43	39	39	35	32	31	28	26	22						22														
5	67	56	48	42	61	51	44	39	43	38	33	35	31	28	28	25	23	20						20														
6	62	50	42	36	56	46	39	34	39	33	29	32	28	25	25	22	20	17						17														
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18	15						15														
8	53	41	33	28	48	38	31	26	32	27	23	26	22	19	21	18	16	14						14														
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	20	17	14	12						12														
10	46	34	27	22	42	32	25	21	27	22	18	22	18	16	18	15	13	11						11														

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3121	3121	3121
5°	3124	3075	3097
10°	3097	3032	3054
15°	3049	2980	2988
20°	2985	2908	2920
25°	2922	2824	2841
30°	2844	2744	2741
35°	2769	2651	2636
40°	2677	2557	2536
45°	2585	2462	2433
50°	2485	2363	2314
55°	2380	2248	2205
60°	2261	2112	2079
65°	2131	1971	1931
70°	1965	1798	1772
75°	1736	1592	1623
80°	1459	1328	1341
85°	1027	881	878

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2585 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	256.4	1.6
10°-20°	721.3	4.6
20°-30°	1060.0	6.7
30°-40°	1231.1	7.8
40°-50°	1229.6	7.8
50°-60°	1072.2	6.8
60°-70°	792.6	5.0
70°-80°	448.4	2.8
80°-90°	123.7	0.8
90°-100°	100.2	0.6
100°-110°	373.4	2.4
110°-120°	990.2	6.3
120°-130°	1642.4	10.4
130°-140°	1744.6	11.0
140°-150°	1621.4	10.2
150°-160°	1303.5	8.2
160°-170°	840.0	5.3
170°-180°	289.1	1.8
0°-30°	2037.7	12.9
0°-40°	3268.8	20.6
0°-60°	5570.6	35.2
0°-90°	6935.4	43.8
90°-120°	1463.7	9.2
90°-150°	6472.0	40.9
90°-180°	8905.0	56.2
0°-180°	15840.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2724	2724	2724	2724	2724	
5°	2724	2714	2685	2705	2700	259
15°	2593	2577	2543	2554	2541	730
25°	2347	2326	2281	2286	2281	1080
35°	2025	1998	1956	1941	1928	1264
45°	1648	1629	1590	1561	1550	1271
55°	1247	1231	1200	1168	1155	1115
65°	841	825	799	775	762	831
75°	440	435	422	406	411	470
85°	107	105	102	94	92	120
90°	2	26	44	55	59	15
95°	143	70	86	97	94	169
105°	668	734	134	158	167	714
115°	1264	1301	1356	338	180	1244
125°	1787	1815	1857	1873	1879	1594
135°	2211	2246	2266	2288	2284	1708
145°	2565	2563	2600	2615	2604	1604
155°	2824	2805	2831	2844	2826	1301
165°	2976	2963	2969	2985	2969	841
175°	3044	3028	3033	3048	3026	290
180°	3037	3037	3037	3037	3037	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2723.7	2723.7	2723.7	2723.7	2723.7
2.5°	2739.6	2726.5	2697.6	2723.7	2718.7
5°	2723.7	2713.5	2684.6	2705.4	2700.4
7.5°	2705.4	2689.8	2660.9	2682.1	2676.8
10°	2676.8	2658.4	2627.0	2647.9	2640.1
12.5°	2637.3	2621.8	2590.4	2603.4	2598.1
15°	2592.9	2577.3	2543.1	2553.7	2540.6
17.5°	2537.8	2522.3	2488.1	2501.2	2488.1
20°	2477.5	2462.0	2425.3	2433.1	2422.8
22.5°	2417.5	2393.9	2359.7	2359.7	2354.4
25°	2346.7	2325.8	2281.4	2286.4	2281.4
27.5°	2268.0	2249.7	2215.8	2208.0	2194.9
30°	2189.7	2168.5	2129.4	2121.6	2111.0
32.5°	2105.7	2090.2	2048.2	2032.4	2021.8
35°	2024.6	1998.5	1956.5	1940.7	1927.6
37.5°	1932.9	1909.3	1867.3	1849.0	1835.9
40°	1838.7	1817.6	1775.6	1752.3	1741.7
42.5°	1747.0	1725.9	1684.2	1657.8	1642.2
45°	1647.5	1629.2	1589.7	1561.1	1550.5
47.5°	1550.5	1532.2	1490.2	1461.3	1445.8
50°	1448.3	1435.2	1398.5	1361.9	1348.8
52.5°	1348.8	1330.5	1296.6	1267.7	1249.3
55°	1246.8	1231.0	1199.6	1168.2	1155.1
57.5°	1144.6	1131.5	1097.3	1065.9	1055.4
60°	1042.3	1032.0	995.4	966.5	958.7
62.5°	942.8	924.5	898.4	872.3	861.7
65°	840.9	825.0	798.9	775.3	762.2
67.5°	736.1	722.8	699.4	681.1	670.5
70°	639.1	628.6	604.9	586.6	576.3
72.5°	539.6	529.1	516.0	497.7	489.9
75°	439.9	434.9	421.5	406.0	411.3
77.5°	351.0	340.4	335.1	327.3	319.6
80°	262.0	259.3	254.0	246.2	240.9
82.5°	178.1	178.1	175.6	165.1	165.1
85°	107.3	104.8	102.3	94.2	91.7
87.5°	47.2	42.0	36.7	28.9	26.1
90°	2.1	26.4	43.8	55.1	59.2
92.5°	55.1	46.2	52.7	57.2	59.2
95°	142.8	70.2	85.6	96.8	94.5
97.5°	257.1	77.0	112.0	118.7	120.8
100°	389.1	88.0	125.3	142.8	147.2
102.5°	534.0	529.8	129.7	153.7	160.5
105°	668.1	734.2	134.1	158.2	167.0
107.5°	824.2	879.0	138.6	162.6	171.5
110°	973.7	1019.7	384.7	164.9	173.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1114.4	1153.8	1116.5	169.1	175.9
115°	1263.7	1301.0	1356.1	338.5	180.3
117.5°	1393.4	1437.3	1474.8	1160.4	584.6
120°	1538.5	1571.4	1611.1	1637.4	1340.7
122.5°	1661.5	1696.7	1740.8	1753.8	1756.2
125°	1786.7	1815.4	1857.2	1872.6	1879.1
127.5°	1901.0	1931.8	1965.0	1986.9	1989.0
130°	2008.8	2044.1	2068.1	2092.3	2090.3
132.5°	2118.7	2147.4	2171.4	2191.3	2189.2
135°	2211.1	2246.3	2265.9	2288.1	2283.7
137.5°	2307.7	2334.0	2356.2	2378.1	2371.6
140°	2402.1	2419.9	2443.9	2463.7	2452.8
142.5°	2481.5	2496.9	2525.3	2542.8	2531.9
145°	2565.0	2562.6	2600.0	2615.4	2604.4
147.5°	2637.3	2630.8	2668.1	2679.1	2670.4
150°	2707.8	2692.4	2727.6	2740.6	2729.7
152.5°	2767.0	2749.5	2782.4	2795.7	2780.3
155°	2824.2	2804.6	2830.9	2844.0	2826.5
157.5°	2870.4	2852.9	2872.7	2888.1	2870.4
160°	2910.0	2896.7	2910.0	2923.1	2907.7
162.5°	2945.0	2931.9	2942.9	2958.3	2938.5
165°	2975.8	2962.7	2969.3	2984.7	2969.3
167.5°	3000.1	2986.8	2993.5	3008.9	2989.1
170°	3019.9	3006.6	3011.0	3026.4	3006.6
172.5°	3033.0	3019.9	3024.3	3039.7	3019.9
175°	3043.9	3028.5	3033.0	3048.3	3026.4
177.5°	3048.3	3033.0	3035.3	3050.7	3030.9
180°	3037.4	3037.4	3037.4	3037.4	3037.4



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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	10.59	11.40	11.60	12.42	13.77	10.14	10.95	11.15	11.97	13.33
	3H	12.24	12.97	13.26	13.99	15.37	11.75	12.47	12.77	13.50	14.88
	4H	12.82	13.51	13.85	14.54	15.92	12.33	13.02	13.36	14.05	15.43
	6H	13.22	13.85	14.26	14.88	16.28	12.72	13.35	13.76	14.38	15.78
	8H	13.32	13.92	14.36	14.97	16.36	12.82	13.42	13.86	14.47	15.86
	12H	13.36	13.93	14.41	14.98	16.40	12.85	13.43	13.91	14.47	15.89
4H	2H	11.04	11.73	12.08	12.76	14.14	10.68	11.37	11.72	12.40	13.79
	3H	12.90	13.47	13.94	14.53	15.92	12.49	13.06	13.53	14.12	15.52
	4H	13.60	14.13	14.66	15.18	16.60	13.18	13.70	14.23	14.75	16.17
	6H	14.11	14.56	15.17	15.64	17.05	13.68	14.13	14.74	15.20	16.62
	8H	14.26	14.68	15.32	15.74	17.18	13.82	14.24	14.88	15.31	16.74
	12H	14.33	14.71	15.41	15.79	17.22	13.88	14.26	14.96	15.34	16.77
8H	4H	13.79	14.21	14.85	15.28	16.71	13.41	13.84	14.48	14.90	16.33
	6H	14.41	14.76	15.50	15.87	17.30	14.03	14.38	15.12	15.49	16.91
	8H	14.63	14.94	15.72	16.03	17.48	14.24	14.54	15.33	15.64	17.08
	12H	14.76	15.03	15.85	16.11	17.60	14.35	14.62	15.44	15.70	17.19
12H	4H	13.77	14.15	14.85	15.23	16.67	13.41	13.79	14.49	14.87	16.30
	6H	14.44	14.75	15.54	15.84	17.29	14.07	14.38	15.16	15.47	16.91
	8H	14.68	14.95	15.77	16.03	17.52	14.30	14.57	15.39	15.65	17.14