

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: P920149

Luminaire Tested: DFN2DIP-SQ3F0-080D100US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920149
REPORT IS A COMBINATION OF REPORTS P901497 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-080D100US935-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

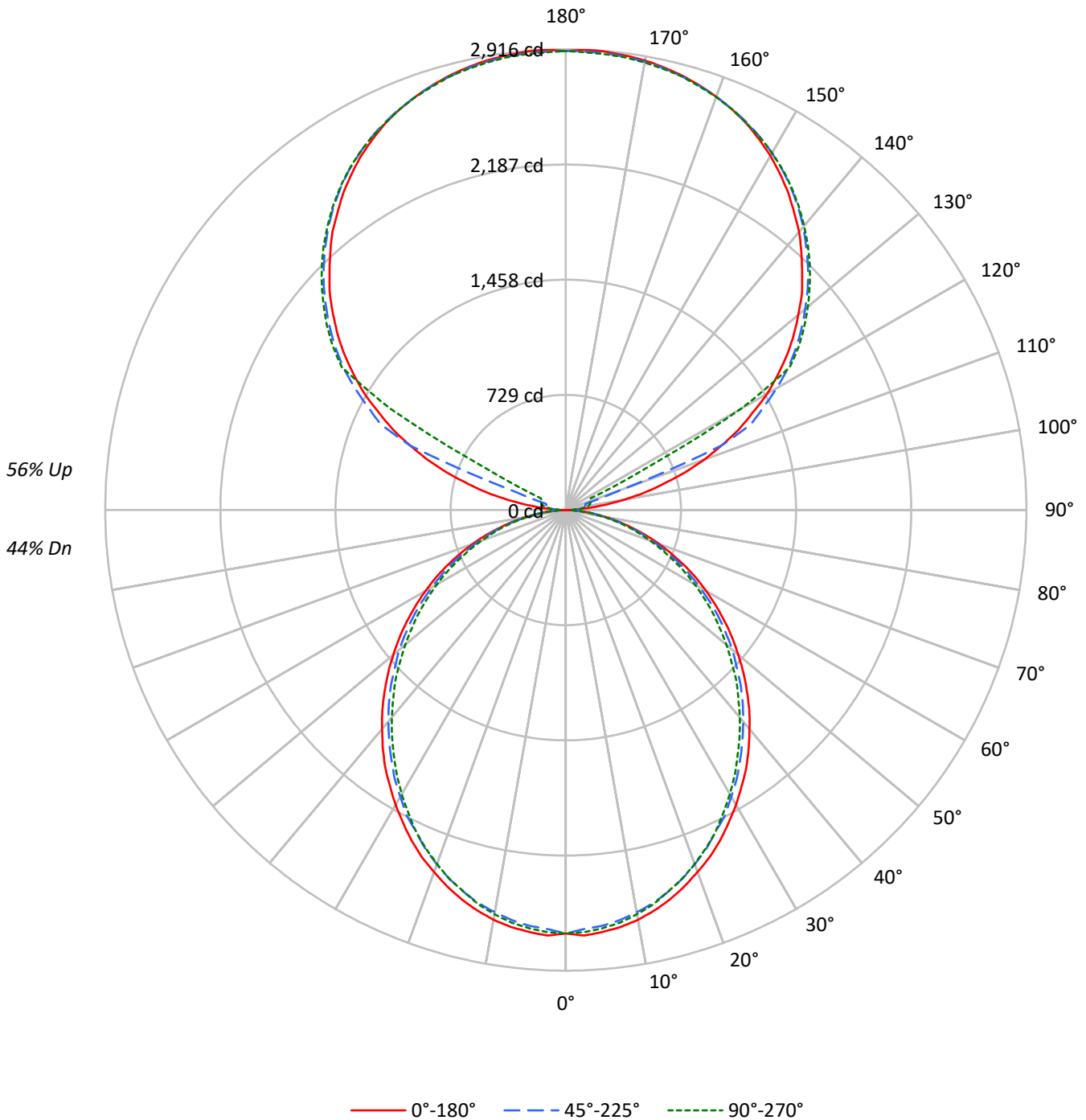
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15343.0 lumens
Efficiency: N/A
Efficacy: 99.8 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): 153.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
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	50	30	10	0		
RCR																										
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44								
1	97	92	88	85	88	85	81	78	70	68	66	57	56	54	45	44	43	37								
2	88	81	74	69	80	74	69	64	62	58	55	50	48	45	40	38	36	31								
3	80	71	64	58	73	65	59	54	54	50	46	44	41	38	35	33	31	27								
4	73	63	55	49	67	58	51	46	48	43	39	40	36	33	31	29	27	23								
5	67	56	48	42	61	51	44	39	43	38	34	35	31	28	28	25	23	20								
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	26	23	20	17								
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18	15								
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16	14								
9	49	37	30	25	45	35	28	23	29	24	20	25	20	18	20	17	15	12								
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	18	15	13	11								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3071	3071	3071
5°	3074	3026	3048
10°	3047	2983	3005
15°	3000	2932	2940
20°	2938	2862	2873
25°	2876	2778	2796
30°	2798	2700	2697
35°	2724	2609	2594
40°	2634	2516	2495
45°	2544	2423	2394
50°	2445	2325	2277
55°	2342	2212	2169
60°	2225	2078	2046
65°	2097	1939	1900
70°	1934	1770	1744
75°	1708	1567	1597
80°	1436	1307	1320
85°	1011	867	864

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2544 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	252.3	1.6
10°-20°	709.8	4.6
20°-30°	1043.1	6.8
30°-40°	1211.4	7.9
40°-50°	1209.9	7.9
50°-60°	1055.0	6.9
60°-70°	779.9	5.1
70°-80°	441.2	2.9
80°-90°	121.6	0.8
90°-100°	95.8	0.6
100°-110°	357.2	2.3
110°-120°	947.3	6.2
120°-130°	1571.2	10.2
130°-140°	1669.0	10.9
140°-150°	1551.1	10.1
150°-160°	1247.1	8.1
160°-170°	803.6	5.2
170°-180°	276.6	1.8
0°-30°	2005.1	13.1
0°-40°	3216.5	21.0
0°-60°	5481.5	35.7
0°-90°	6824.2	44.5
90°-120°	1400.3	9.1
90°-150°	6191.6	40.4
90°-180°	8519.0	55.5
0°-180°	15343.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2680	2680	2680	2680	2680	
5°	2680	2670	2642	2662	2657	254
15°	2551	2536	2502	2513	2500	719
25°	2309	2289	2245	2250	2245	1063
35°	1992	1966	1925	1910	1897	1244
45°	1621	1603	1564	1536	1526	1251
55°	1227	1211	1180	1150	1137	1097
65°	827	812	786	763	750	818
75°	433	428	415	400	405	462
85°	106	103	101	93	90	118
90°	2	25	42	53	57	14
95°	137	67	82	93	90	162
105°	639	702	128	151	160	683
115°	1209	1245	1297	324	172	1190
125°	1709	1737	1777	1792	1798	1524
135°	2115	2149	2168	2189	2185	1634
145°	2454	2452	2487	2502	2492	1535
155°	2702	2683	2708	2721	2704	1245
165°	2847	2834	2841	2855	2841	804
175°	2912	2897	2902	2916	2895	277
180°	2906	2906	2906	2906	2906	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2680.1	2680.1	2680.1	2680.1	2680.1
2.5°	2695.7	2682.9	2654.5	2680.1	2675.2
5°	2680.1	2670.0	2641.6	2662.1	2657.2
7.5°	2662.1	2646.8	2618.4	2639.1	2634.0
10°	2634.0	2615.9	2585.0	2605.5	2597.9
12.5°	2595.1	2579.8	2548.9	2561.7	2556.6
15°	2551.4	2536.1	2502.4	2512.8	2500.0
17.5°	2497.2	2481.9	2448.2	2461.2	2448.2
20°	2437.9	2422.6	2386.5	2394.2	2384.0
22.5°	2378.9	2355.6	2321.9	2321.9	2316.8
25°	2309.1	2288.6	2244.9	2249.8	2244.9
27.5°	2231.7	2213.7	2180.3	2172.6	2159.8
30°	2154.6	2133.8	2095.3	2087.7	2077.2
32.5°	2072.1	2056.8	2015.4	1999.8	1989.5
35°	1992.2	1966.5	1925.2	1909.6	1896.8
37.5°	1901.9	1878.7	1837.5	1819.4	1806.5
40°	1809.3	1788.5	1747.2	1724.2	1713.8
42.5°	1719.1	1698.2	1657.2	1631.2	1616.0
45°	1621.2	1603.1	1564.3	1536.1	1525.8
47.5°	1525.8	1507.7	1466.4	1438.0	1422.6
50°	1425.1	1412.3	1376.1	1340.1	1327.2
52.5°	1327.2	1309.1	1275.8	1247.4	1229.3
55°	1226.8	1211.3	1180.4	1149.5	1136.6
57.5°	1126.3	1113.4	1079.8	1048.9	1038.4
60°	1025.6	1015.5	979.4	951.0	943.3
62.5°	927.7	909.7	884.0	858.3	847.9
65°	827.4	811.8	786.1	762.8	750.0
67.5°	724.3	711.2	688.2	670.2	659.8
70°	628.9	618.5	595.3	577.2	567.1
72.5°	531.0	520.6	507.7	489.7	482.1
75°	432.8	427.9	414.8	399.5	404.7
77.5°	345.3	334.9	329.8	322.1	314.4
80°	257.9	255.1	249.9	242.3	237.0
82.5°	175.3	175.3	172.8	162.4	162.4
85°	105.6	103.1	100.7	92.7	90.2
87.5°	46.5	41.3	36.1	28.4	25.7
90°	2.0	25.2	41.9	52.7	56.7
92.5°	52.7	44.2	50.5	54.7	56.7
95°	136.6	67.2	81.9	92.6	90.4
97.5°	245.9	73.6	107.1	113.6	115.6
100°	372.3	84.1	119.9	136.6	140.9
102.5°	510.8	506.9	124.1	147.1	153.5
105°	639.2	702.3	128.4	151.3	159.8
107.5°	788.5	840.9	132.6	155.6	164.0
110°	931.5	975.5	368.0	157.8	166.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1066.1	1103.8	1068.2	161.8	168.3
115°	1208.9	1244.7	1297.4	323.8	172.5
117.5°	1333.0	1375.0	1410.9	1110.1	559.3
120°	1471.9	1503.3	1541.3	1566.5	1282.6
122.5°	1589.5	1623.2	1665.3	1677.8	1680.1
125°	1709.3	1736.8	1776.8	1791.5	1797.7
127.5°	1818.7	1848.1	1879.8	1900.8	1902.8
130°	1921.7	1955.5	1978.5	2001.6	1999.7
132.5°	2026.9	2054.3	2077.3	2096.3	2094.3
135°	2115.3	2149.0	2167.7	2188.9	2184.7
137.5°	2207.7	2232.9	2254.1	2275.1	2268.8
140°	2298.0	2315.1	2338.0	2357.0	2346.5
142.5°	2373.9	2388.7	2415.9	2432.6	2422.2
145°	2453.8	2451.6	2487.3	2502.1	2491.6
147.5°	2523.0	2516.8	2552.4	2562.9	2554.8
150°	2590.4	2575.7	2609.4	2621.9	2611.4
152.5°	2647.1	2630.3	2661.9	2674.5	2659.8
155°	2701.8	2683.0	2708.3	2720.8	2704.0
157.5°	2746.0	2729.3	2748.2	2762.9	2746.0
160°	2784.0	2771.2	2784.0	2796.4	2781.7
162.5°	2817.4	2804.9	2815.4	2830.1	2811.2
165°	2846.8	2834.3	2840.6	2855.3	2840.6
167.5°	2870.1	2857.3	2863.9	2878.6	2859.5
170°	2889.0	2876.3	2880.6	2895.3	2876.3
172.5°	2901.5	2889.0	2893.3	2908.0	2889.0
175°	2912.0	2897.3	2901.5	2916.3	2895.3
177.5°	2916.3	2901.5	2903.8	2918.5	2899.5
180°	2905.8	2905.8	2905.8	2905.8	2905.8



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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	10.60	11.42	11.61	12.43	13.78	10.16	10.97	11.16	11.99	13.33
	3H	12.26	12.98	13.27	14.01	15.38	11.77	12.49	12.78	13.52	14.89
	4H	12.84	13.53	13.86	14.55	15.93	12.34	13.03	13.37	14.06	15.44
	6H	13.23	13.87	14.27	14.90	16.29	12.73	13.37	13.77	14.40	15.79
	8H	13.33	13.94	14.37	14.99	16.37	12.83	13.44	13.87	14.48	15.87
	12H	13.38	13.95	14.43	14.99	16.40	12.87	13.44	13.92	14.49	15.89
4H	2H	11.05	11.75	12.09	12.77	14.15	10.70	11.39	11.73	12.42	13.79
	3H	12.91	13.49	13.95	14.54	15.93	12.50	13.08	13.54	14.13	15.52
	4H	13.62	14.15	14.67	15.19	16.60	13.20	13.72	14.24	14.77	16.18
	6H	14.13	14.58	15.18	15.65	17.06	13.69	14.15	14.75	15.22	16.62
	8H	14.27	14.70	15.33	15.76	17.18	13.84	14.26	14.89	15.32	16.74
	12H	14.34	14.73	15.42	15.80	17.23	13.89	14.28	14.97	15.35	16.78
8H	4H	13.81	14.23	14.87	15.29	16.72	13.43	13.85	14.49	14.92	16.34
	6H	14.43	14.78	15.51	15.88	17.30	14.05	14.40	15.13	15.50	16.92
	8H	14.65	14.96	15.74	16.04	17.48	14.25	14.56	15.34	15.65	17.09
	12H	14.77	15.04	15.87	16.13	17.61	14.36	14.63	15.46	15.72	17.20
12H	4H	13.79	14.17	14.87	15.25	16.68	13.42	13.81	14.50	14.88	16.31
	6H	14.46	14.77	15.55	15.85	17.29	14.09	14.39	15.17	15.48	16.92
	8H	14.69	14.97	15.79	16.05	17.53	14.31	14.58	15.41	15.67	17.15