

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: P920425

Luminaire Tested: DFN2DIP-SQ4F0-090D090US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920425
REPORT IS A COMBINATION OF REPORTS P901639 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-090D090US935-FLLONL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

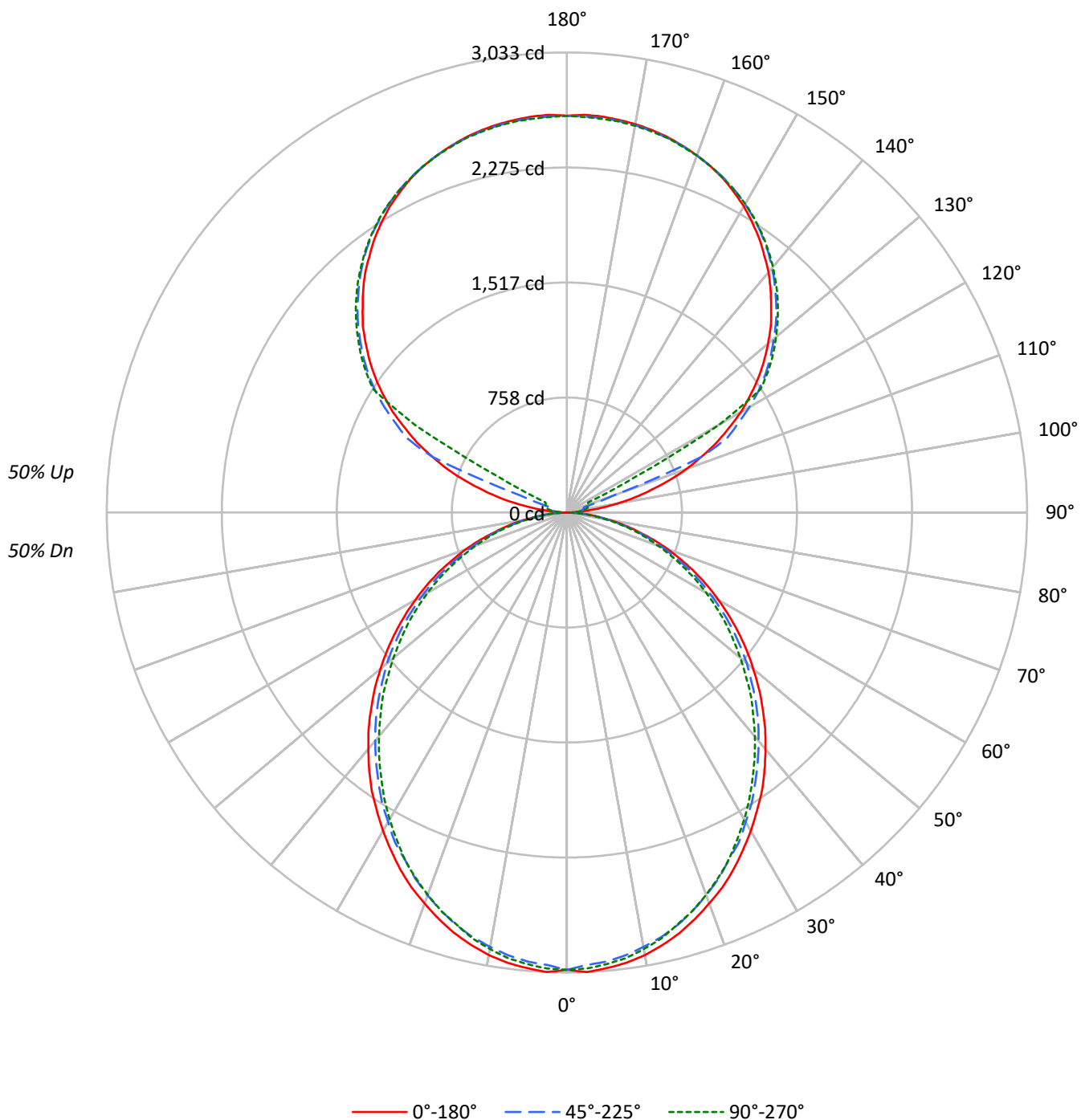
Lumens per Lamp: N/A
Luminaire Lumens: 15343.0 lumens
Efficiency: N/A
Efficacy: 102.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 149.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P920425

CATALOG NUMBER: DFN2DIP-SQ4F0-090D090US935-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P920425

CATALOG NUMBER: DFN2DIP-SQ4F0-090D090US935-FLLONL

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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56
1	98	93	90	86	90	86	83	80	73	71	68	61	59	58	50	48	47
2	89	82	75	70	82	76	70	66	64	60	57	53	51	48	44	42	40
3	81	72	64	59	75	66	60	55	56	52	48	47	44	41	39	36	34
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	29
5	68	57	48	42	63	53	45	40	45	39	35	38	34	30	31	28	26
6	63	51	43	37	58	47	40	35	40	35	31	34	30	27	28	25	23
7	58	46	38	32	53	43	36	30	37	31	27	31	27	23	26	23	20
8	54	42	34	29	50	39	32	27	33	28	24	28	24	21	24	20	18
9	50	38	30	25	46	35	29	24	31	25	21	26	22	19	22	19	16
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2116	2116	2116
5°	2119	2087	2101
10°	2102	2059	2073
15°	2071	2025	2029
20°	2029	1979	1984
25°	1988	1923	1932
30°	1935	1871	1866
35°	1886	1809	1796
40°	1825	1747	1729
45°	1765	1685	1661
50°	1699	1620	1582
55°	1629	1545	1509
60°	1551	1455	1426
65°	1465	1363	1328
70°	1356	1250	1223
75°	1205	1115	1127
80°	1024	943	941
85°	740	645	633

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1765 cd/sqm

TEST NUMBER: P920425

CATALOG NUMBER: DFN2DIP-SQ4F0-090D090US935-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	283.8	1.8
10°-20°	798.5	5.2
20°-30°	1173.4	7.6
30°-40°	1362.9	8.9
40°-50°	1361.2	8.9
50°-60°	1186.9	7.7
60°-70°	877.4	5.7
70°-80°	496.4	3.2
80°-90°	135.6	0.9
90°-100°	86.2	0.6
100°-110°	321.5	2.1
110°-120°	852.6	5.6
120°-130°	1414.1	9.2
130°-140°	1502.1	9.8
140°-150°	1396.0	9.1
150°-160°	1122.4	7.3
160°-170°	723.2	4.7
170°-180°	248.9	1.6
0°-30°	2255.7	14.7
0°-40°	3618.6	23.6
0°-60°	6166.7	40.2
0°-90°	7676.1	50.0
90°-120°	1260.3	8.2
90°-150°	5572.4	36.3
90°-180°	7667.0	50.0
0°-180°	15343.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3015	3015	3015	3015	3015	
5°	3015	3004	2972	2995	2989	286
15°	2870	2853	2815	2827	2812	808
25°	2598	2575	2526	2531	2526	1195
35°	2241	2212	2166	2148	2134	1400
45°	1824	1804	1760	1728	1716	1408
55°	1380	1363	1328	1293	1279	1234
65°	931	913	884	858	844	920
75°	487	481	467	449	455	520
85°	119	116	113	104	102	132
90°	2	23	38	47	51	14
95°	123	60	74	83	81	146
105°	575	632	116	136	144	615
115°	1088	1120	1168	291	155	1071
125°	1538	1563	1599	1612	1618	1372
135°	1904	1934	1951	1970	1966	1471
145°	2208	2206	2239	2252	2242	1381
155°	2432	2415	2437	2449	2434	1121
165°	2562	2551	2557	2570	2557	724
175°	2621	2608	2611	2625	2606	249
180°	2615	2615	2615	2615	2615	

TEST NUMBER: P920425

CATALOG NUMBER: DFN2DIP-SQ4F0-090D090US935-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3015.1	3015.1	3015.1	3015.1	3015.1
2.5°	3032.7	3018.2	2986.3	3015.1	3009.6
5°	3015.1	3003.8	2971.8	2994.9	2989.3
7.5°	2994.9	2977.7	2945.6	2969.1	2963.2
10°	2963.2	2942.9	2908.1	2931.2	2922.6
12.5°	2919.5	2902.3	2867.6	2881.9	2876.2
15°	2870.3	2853.1	2815.2	2826.9	2812.4
17.5°	2809.3	2792.1	2754.3	2768.8	2754.3
20°	2742.6	2725.4	2684.8	2693.4	2682.0
22.5°	2676.2	2650.1	2612.2	2612.2	2606.3
25°	2597.7	2574.6	2525.5	2531.0	2525.5
27.5°	2510.7	2490.4	2452.9	2444.3	2429.8
30°	2424.0	2400.5	2357.2	2348.5	2336.9
32.5°	2331.1	2313.8	2267.4	2249.9	2238.2
35°	2241.3	2212.3	2165.8	2148.4	2133.9
37.5°	2139.8	2113.6	2067.1	2046.9	2032.4
40°	2035.4	2012.1	1965.6	1939.7	1928.1
42.5°	1933.9	1910.6	1864.4	1835.2	1818.0
45°	1823.8	1803.5	1759.8	1728.1	1716.5
47.5°	1716.5	1696.2	1649.7	1617.7	1600.5
50°	1603.3	1588.8	1548.2	1507.6	1493.1
52.5°	1493.1	1472.8	1435.3	1403.3	1383.0
55°	1380.3	1362.7	1327.9	1293.2	1278.8
57.5°	1267.0	1252.6	1214.8	1180.0	1168.3
60°	1153.8	1142.5	1101.8	1069.9	1061.3
62.5°	1043.7	1023.4	994.5	965.6	953.9
65°	930.8	913.3	884.3	858.2	843.8
67.5°	814.8	800.1	774.2	754.0	742.3
70°	707.5	695.8	669.7	649.4	638.0
72.5°	597.4	585.7	571.2	551.0	542.3
75°	487.0	481.4	466.7	449.4	455.3
77.5°	388.5	376.9	371.0	362.4	353.8
80°	290.1	287.0	281.1	272.5	266.7
82.5°	197.2	197.2	194.4	182.7	182.7
85°	118.7	116.0	113.2	104.3	101.5
87.5°	52.3	46.4	40.6	32.0	28.9
90°	1.8	22.7	37.7	47.4	51.0
92.5°	47.4	39.8	45.4	49.2	51.0
95°	123.0	60.4	73.7	83.3	81.4
97.5°	221.4	66.3	96.4	102.2	104.0
100°	335.0	75.8	107.9	123.0	126.7
102.5°	459.8	456.2	111.7	132.3	138.2
105°	575.2	632.1	115.5	136.2	143.8
107.5°	709.6	756.8	119.3	140.0	147.7
110°	838.4	878.0	331.2	142.0	149.5



TEST NUMBER: P920425

CATALOG NUMBER: DFN2DIP-SQ4F0-090D090US935-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	959.5	993.4	961.3	145.6	151.4
115°	1088.0	1120.2	1167.6	291.4	155.2
117.5°	1199.7	1237.5	1269.8	999.1	503.3
120°	1324.6	1353.0	1387.2	1409.8	1154.3
122.5°	1430.5	1460.9	1498.8	1510.0	1512.1
125°	1538.3	1563.1	1599.0	1612.3	1617.9
127.5°	1636.8	1663.3	1691.9	1710.7	1712.5
130°	1729.6	1760.0	1780.6	1801.5	1799.7
132.5°	1824.2	1848.9	1869.6	1886.7	1884.9
135°	1903.8	1934.1	1950.9	1970.0	1966.3
137.5°	1986.9	2009.6	2028.7	2047.5	2041.9
140°	2068.2	2083.5	2104.2	2121.2	2111.9
142.5°	2136.6	2149.8	2174.3	2189.3	2180.0
145°	2208.5	2206.4	2238.6	2251.9	2242.4
147.5°	2270.7	2265.1	2297.2	2306.7	2299.2
150°	2331.4	2318.2	2348.5	2359.7	2350.3
152.5°	2382.4	2367.3	2395.6	2407.1	2393.8
155°	2431.6	2414.8	2437.4	2448.7	2433.6
157.5°	2471.4	2456.3	2473.4	2486.6	2471.4
160°	2505.5	2494.1	2505.5	2516.8	2503.5
162.5°	2535.6	2524.4	2533.8	2547.1	2530.0
165°	2562.2	2550.9	2556.6	2569.8	2556.6
167.5°	2583.1	2571.6	2577.4	2590.7	2573.6
170°	2600.1	2588.7	2592.5	2605.7	2588.7
172.5°	2611.4	2600.1	2603.9	2617.2	2600.1
175°	2620.8	2607.5	2611.4	2624.6	2605.7
177.5°	2624.6	2611.4	2613.4	2626.6	2609.6
180°	2615.2	2615.2	2615.2	2615.2	2615.2

TEST NUMBER: P920425

CATALOG NUMBER: DFN2DIP-SQ4F0-090D090US935-FLLONL

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	9.89	10.75	10.85	11.72	13.00	9.45	10.31	10.40	11.28	12.55
	3H	11.56	12.33	12.52	13.31	14.60	11.07	11.84	12.03	12.82	14.11
	4H	12.15	12.88	13.13	13.86	15.16	11.65	12.38	12.63	13.37	14.67
	6H	12.55	13.22	13.54	14.21	15.53	12.05	12.72	13.04	13.71	15.03
	8H	12.66	13.30	13.66	14.31	15.62	12.15	12.80	13.15	13.80	15.11
	12H	12.71	13.32	13.71	14.32	15.65	12.20	12.81	13.20	13.81	15.14
4H	2H	10.35	11.08	11.34	12.07	13.37	10.00	10.73	10.99	11.71	13.02
	3H	12.22	12.83	13.22	13.85	15.16	11.82	12.43	12.81	13.44	14.76
	4H	12.94	13.50	13.95	14.51	15.85	12.52	13.08	13.52	14.08	15.42
	6H	13.46	13.94	14.48	14.97	16.31	13.03	13.51	14.04	14.54	15.88
	8H	13.61	14.06	14.63	15.09	16.44	13.18	13.62	14.19	14.65	16.00
	12H	13.69	14.09	14.72	15.13	16.49	13.24	13.64	14.27	14.68	16.04
8H	4H	13.14	13.59	14.16	14.61	15.96	12.76	13.21	13.78	14.23	15.59
	6H	13.77	14.15	14.82	15.21	16.56	13.39	13.76	14.43	14.83	16.18
	8H	14.00	14.33	15.05	15.38	16.74	13.61	13.93	14.66	14.98	16.35
	12H	14.13	14.42	15.19	15.47	16.88	13.72	14.01	14.78	15.06	16.47
12H	4H	13.12	13.53	14.16	14.57	15.92	12.76	13.16	13.79	14.20	15.56
	6H	13.80	14.13	14.85	15.18	16.55	13.43	13.76	14.48	14.81	16.18
	8H	14.05	14.34	15.10	15.38	16.79	13.67	13.96	14.72	15.00	16.41

END OF REPORT