

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: P903777

Luminaire Tested: DFN2DIP-SQ3F0-080D090US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903777
REPORT IS A COMBINATION OF REPORTS P901479 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-080D090US830-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

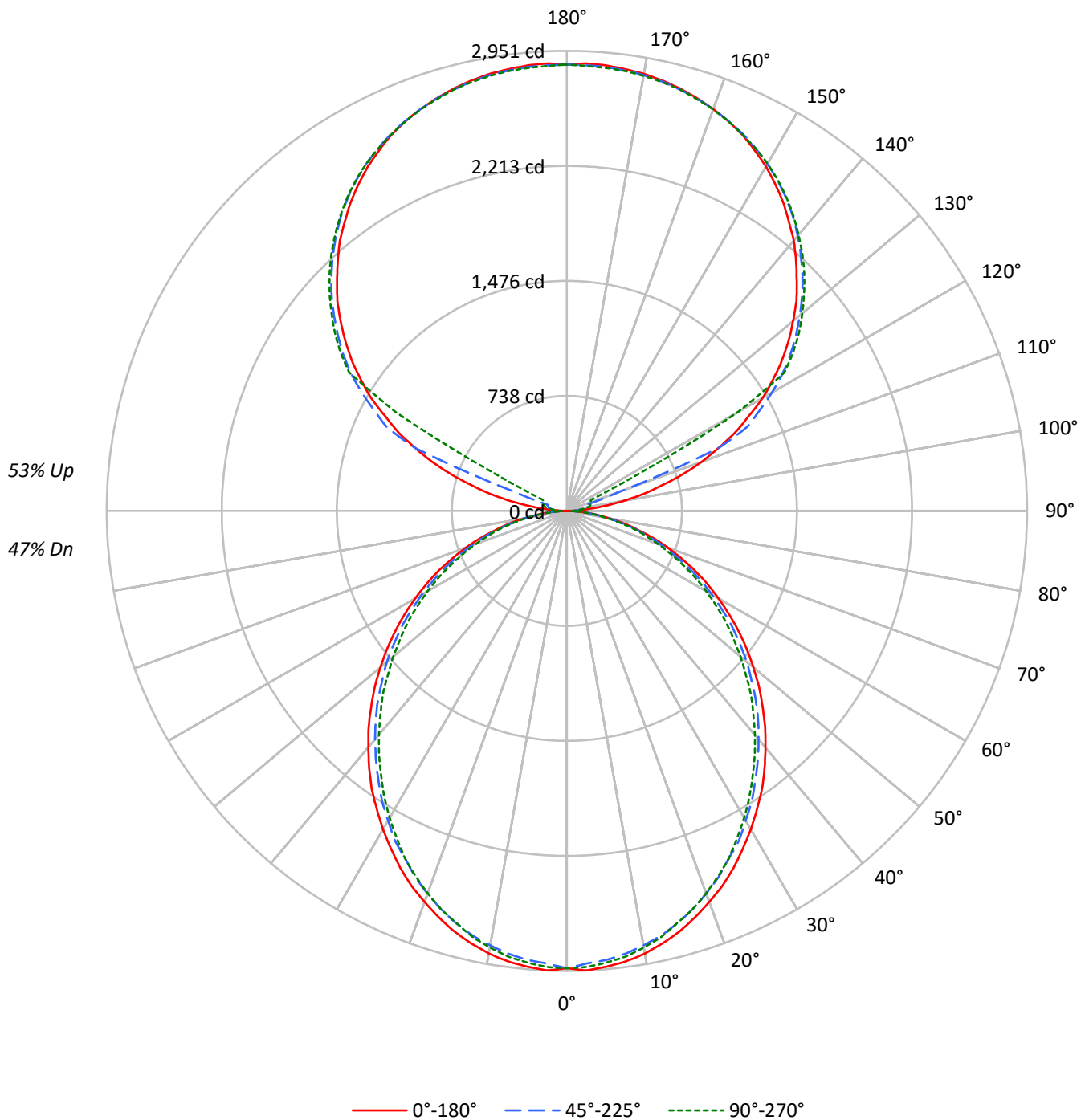
Lumens per Lamp: N/A
Luminaire Lumens: 15863.0 lumens
Efficiency: N/A
Efficacy: 109.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 144.7
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

TEST NUMBER: P903777

CATALOG NUMBER: DFN2DIP-SQ3F0-080D090US830-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P903777

CATALOG NUMBER: DFN2DIP-SQ3F0-080D090US830-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	106	106	106	106	98	98	98	98	82	82	82	67	67	67	53	53	53
1	97	93	89	85	89	85	82	79	72	69	67	59	57	56	47	46	45
2	88	81	75	70	81	75	69	65	63	59	56	52	49	47	42	40	38
3	81	71	64	58	74	66	59	54	55	51	47	46	42	39	37	34	32
4	74	63	55	49	68	58	51	46	49	44	40	41	37	34	33	30	28
5	68	56	48	42	62	52	45	39	44	39	34	37	32	29	30	27	24
6	62	50	42	36	57	47	39	34	40	34	30	33	29	26	27	24	21
7	58	45	38	32	53	42	35	30	36	30	26	30	26	23	25	21	19
8	53	41	34	28	49	38	31	27	33	27	23	28	23	20	23	19	17
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15
10	47	34	27	23	43	32	26	21	28	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3362	3362	3362
5°	3365	3313	3336
10°	3336	3266	3290
15°	3284	3210	3218
20°	3216	3133	3145
25°	3148	3041	3060
30°	3063	2956	2953
35°	2982	2856	2840
40°	2884	2754	2731
45°	2785	2652	2621
50°	2677	2545	2493
55°	2563	2422	2375
60°	2435	2275	2240
65°	2295	2123	2080
70°	2116	1938	1909
75°	1870	1715	1748
80°	1572	1431	1445
85°	1107	949	946

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2785 cd/sqm

TEST NUMBER: P903777

CATALOG NUMBER: DFN2DIP-SQ3F0-080D090US830-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	276.1	1.7
10°-20°	777.0	4.9
20°-30°	1141.8	7.2
30°-40°	1326.2	8.4
40°-50°	1324.5	8.3
50°-60°	1155.0	7.3
60°-70°	853.8	5.4
70°-80°	483.0	3.0
80°-90°	132.5	0.8
90°-100°	94.4	0.6
100°-110°	351.9	2.2
110°-120°	933.3	5.9
120°-130°	1548.0	9.8
130°-140°	1644.3	10.4
140°-150°	1528.2	9.6
150°-160°	1228.6	7.7
160°-170°	791.7	5.0
170°-180°	272.5	1.7
0°-30°	2195.0	13.8
0°-40°	3521.1	22.2
0°-60°	6000.6	37.8
0°-90°	7470.0	47.1
90°-120°	1379.6	8.7
90°-150°	6100.2	38.5
90°-180°	8393.0	52.9
0°-180°	15863.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2934	2934	2934	2934	2934	
5°	2934	2923	2892	2914	2909	279
15°	2793	2776	2739	2751	2737	787
25°	2528	2505	2458	2463	2458	1163
35°	2181	2153	2108	2090	2076	1362
45°	1775	1755	1712	1682	1670	1370
55°	1343	1326	1292	1258	1244	1201
65°	906	889	860	835	821	896
75°	474	468	454	437	443	506
85°	116	113	110	102	99	129
90°	2	25	41	52	56	15
95°	135	66	81	91	89	159
105°	630	692	126	149	157	673
115°	1191	1226	1278	319	170	1173
125°	1684	1711	1750	1765	1771	1502
135°	2084	2117	2136	2157	2152	1610
145°	2418	2415	2451	2465	2455	1512
155°	2662	2644	2668	2681	2664	1227
165°	2805	2792	2799	2813	2799	792
175°	2869	2854	2859	2873	2852	273
180°	2863	2863	2863	2863	2863	

TEST NUMBER: P903777

CATALOG NUMBER: DFN2DIP-SQ3F0-080D090US830-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2933.9	2933.9	2933.9	2933.9	2933.9
2.5°	2951.0	2937.0	2905.9	2933.9	2928.6
5°	2933.9	2922.9	2891.8	2914.2	2908.9
7.5°	2914.2	2897.5	2866.4	2889.1	2883.4
10°	2883.4	2863.6	2829.8	2852.2	2843.9
12.5°	2840.9	2824.1	2790.3	2804.3	2798.7
15°	2793.0	2776.3	2739.4	2750.8	2736.8
17.5°	2733.7	2717.0	2680.1	2694.3	2680.1
20°	2668.8	2652.0	2612.5	2620.9	2609.8
22.5°	2604.2	2578.7	2541.8	2541.8	2536.2
25°	2527.8	2505.4	2457.5	2462.9	2457.5
27.5°	2443.1	2423.4	2386.8	2378.4	2364.4
30°	2358.7	2335.9	2293.8	2285.4	2274.0
32.5°	2268.3	2251.5	2206.3	2189.2	2177.9
35°	2180.9	2152.8	2107.5	2090.5	2076.4
37.5°	2082.1	2056.6	2011.5	1991.7	1977.6
40°	1980.7	1957.8	1912.7	1887.5	1876.1
42.5°	1881.9	1859.1	1814.2	1785.7	1769.1
45°	1774.7	1754.9	1712.4	1681.6	1670.3
47.5°	1670.3	1650.5	1605.2	1574.1	1557.4
50°	1560.1	1546.1	1506.5	1467.0	1452.9
52.5°	1452.9	1433.1	1396.7	1365.6	1345.8
55°	1343.0	1326.0	1292.2	1258.4	1244.3
57.5°	1232.9	1218.9	1182.0	1148.2	1136.8
60°	1122.8	1111.7	1072.1	1041.0	1032.6
62.5°	1015.6	995.9	967.7	939.6	928.2
65°	905.8	888.7	860.5	835.1	821.0
67.5°	792.9	778.5	753.4	733.7	722.3
70°	688.4	677.0	651.7	631.9	620.8
72.5°	581.3	570.0	555.8	536.1	527.7
75°	473.8	468.4	454.1	437.3	443.0
77.5°	378.1	366.6	361.0	352.6	344.2
80°	282.3	279.3	273.6	265.2	259.5
82.5°	191.9	191.9	189.2	177.8	177.8
85°	115.6	112.8	110.2	101.5	98.8
87.5°	50.9	45.2	39.5	31.1	28.2
90°	2.0	24.9	41.3	51.9	55.8
92.5°	51.9	43.5	49.7	53.9	55.8
95°	134.6	66.2	80.7	91.2	89.1
97.5°	242.3	72.6	105.6	111.9	113.9
100°	366.7	82.9	118.1	134.6	138.7
102.5°	503.3	499.4	122.2	144.9	151.3
105°	629.7	692.0	126.4	149.1	157.4
107.5°	776.8	828.5	130.6	153.3	161.6
110°	917.8	961.1	362.6	155.4	163.6

TEST NUMBER: P903777

CATALOG NUMBER: DFN2DIP-SQ3F0-080D090US830-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1050.4	1087.5	1052.3	159.4	165.8
115°	1191.1	1226.2	1278.2	319.1	169.9
117.5°	1313.3	1354.7	1390.1	1093.7	551.0
120°	1450.1	1481.1	1518.5	1543.3	1263.7
122.5°	1566.0	1599.2	1640.8	1653.0	1655.3
125°	1684.0	1711.1	1750.5	1765.0	1771.1
127.5°	1791.8	1820.8	1852.1	1872.7	1874.7
130°	1893.4	1926.7	1949.3	1972.1	1970.2
132.5°	1997.0	2024.0	2046.6	2065.4	2063.4
135°	2084.1	2117.2	2135.7	2156.6	2152.5
137.5°	2175.1	2199.9	2220.8	2241.5	2235.3
140°	2264.1	2280.9	2303.5	2322.1	2311.9
142.5°	2338.9	2353.4	2380.2	2396.7	2386.4
145°	2417.6	2415.4	2450.6	2465.1	2454.8
147.5°	2485.8	2479.6	2514.8	2525.2	2517.0
150°	2552.2	2537.7	2570.9	2583.1	2572.9
152.5°	2608.0	2591.5	2622.5	2635.1	2620.6
155°	2661.9	2643.5	2668.2	2680.6	2664.1
157.5°	2705.5	2689.0	2707.6	2722.2	2705.5
160°	2742.8	2730.3	2742.8	2755.1	2740.6
162.5°	2775.8	2763.4	2773.8	2788.3	2769.7
165°	2804.8	2792.5	2798.7	2813.2	2798.7
167.5°	2827.7	2815.2	2821.5	2836.0	2817.4
170°	2846.4	2833.8	2838.0	2852.5	2833.8
172.5°	2858.7	2846.4	2850.5	2865.0	2846.4
175°	2869.0	2854.5	2858.7	2873.2	2852.5
177.5°	2873.2	2858.7	2860.9	2875.4	2856.8
180°	2862.9	2862.9	2862.9	2862.9	2862.9

TEST NUMBER: P903777

CATALOG NUMBER: DFN2DIP-SQ3F0-080D090US830-FLONL

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	11.18	12.01	12.16	13.01	14.32	10.73	11.57	11.71	12.56	13.87
	3H	12.83	13.58	13.82	14.58	15.92	12.34	13.09	13.33	14.09	15.43
	4H	13.41	14.12	14.42	15.13	16.47	12.92	13.63	13.92	14.64	15.98
	6H	13.81	14.46	14.82	15.47	16.83	13.31	13.96	14.32	14.97	16.33
	8H	13.91	14.53	14.93	15.56	16.91	13.41	14.03	14.43	15.06	16.41
	12H	13.96	14.55	14.98	15.57	16.94	13.45	14.04	14.47	15.06	16.43
4H	2H	11.63	12.34	12.64	13.35	14.69	11.27	11.98	12.29	12.99	14.33
	3H	13.49	14.08	14.51	15.12	16.47	13.08	13.67	14.10	14.71	16.06
	4H	14.20	14.74	15.22	15.77	17.14	13.77	14.31	14.80	15.34	16.72
	6H	14.71	15.17	15.74	16.22	17.60	14.27	14.74	15.31	15.79	17.17
	8H	14.85	15.29	15.89	16.33	17.72	14.42	14.85	15.46	15.90	17.28
	12H	14.92	15.32	15.98	16.38	17.77	14.47	14.87	15.53	15.93	17.32
8H	4H	14.39	14.82	15.43	15.87	17.26	14.01	14.45	15.05	15.49	16.88
	6H	15.01	15.37	16.07	16.46	17.84	14.63	14.99	15.69	16.07	17.46
	8H	15.23	15.55	16.30	16.62	18.02	14.84	15.15	15.91	16.22	17.63
	12H	15.36	15.63	16.43	16.70	18.15	14.94	15.22	16.02	16.29	17.74
12H	4H	14.37	14.76	15.43	15.82	17.22	14.00	14.40	15.06	15.45	16.85
	6H	15.04	15.36	16.11	16.43	17.83	14.67	14.98	15.74	16.05	17.46
	8H	15.28	15.55	16.35	16.62	18.07	14.90	15.17	15.97	16.24	17.69