

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: P908766

Luminaire Tested: DFN2DIP-PN4F0-080D090US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908766
REPORT IS A COMBINATION OF REPORTS P899708 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-080D090US840-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

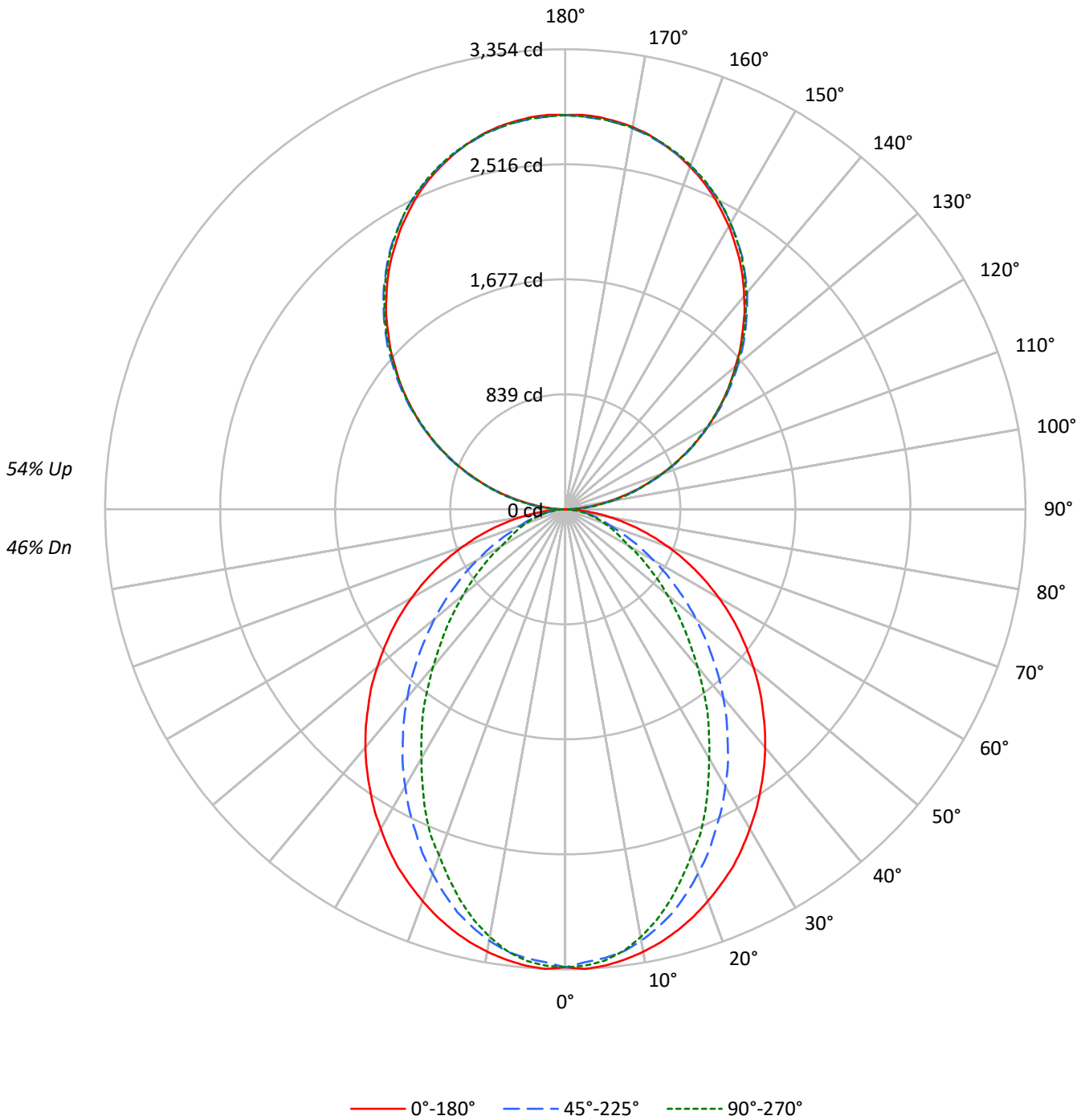
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14910.7 lumens
Efficiency: N/A
Efficacy: 103.7 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: General Diffuse

Input Watts (W): 143.8
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

TEST NUMBER: P908766
CATALOG NUMBER: DFN2DIP-PN4F0-080D090US840-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P908766

CATALOG NUMBER: DFN2DIP-PN4F0-080D090US840-RLFL

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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	53	53	53	46			46
1	97	93	90	86	89	86	83	80	72	70	68	59	57	56	47	46	45	40			40
2	89	82	76	71	82	75	70	66	63	60	57	52	50	47	42	40	39	34			34
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	33	29			29
4	75	64	57	51	68	59	53	48	50	45	41	42	38	35	34	31	29	26			26
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26	22			22
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23	20			20
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21	18			18
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19	16			16
9	51	39	32	27	47	36	30	25	31	26	22	26	22	20	22	19	17	15			15
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	17	15	13			13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2437	2437	2437
5°	2441	2399	2414
10°	2417	2352	2336
15°	2384	2275	2215
20°	2340	2168	2067
25°	2295	2048	1923
30°	2234	1925	1741
35°	2175	1793	1581
40°	2114	1656	1397
45°	2044	1504	1230
50°	1972	1351	1068
55°	1896	1187	911
60°	1808	1016	751
65°	1708	842	676
70°	1586	679	613
75°	1432	600	558
80°	1210	504	486
85°	843	338	368

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2250 cd/sqm



TEST NUMBER: P908766

CATALOG NUMBER: DFN2DIP-PN4F0-080D090US840-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	312.9	2.1
10°-20°	859.1	5.8
20°-30°	1206.1	8.1
30°-40°	1314.7	8.8
40°-50°	1208.4	8.1
50°-60°	949.0	6.4
60°-70°	617.7	4.1
70°-80°	318.0	2.1
80°-90°	89.3	0.6
90°-100°	177.9	1.2
100°-110°	565.2	3.8
110°-120°	967.2	6.5
120°-130°	1272.0	8.5
130°-140°	1427.7	9.6
140°-150°	1400.0	9.4
150°-160°	1174.4	7.9
160°-170°	778.9	5.2
170°-180°	272.2	1.8
0°-30°	2378.1	15.9
0°-40°	3692.9	24.8
0°-60°	5850.2	39.2
0°-90°	6875.3	46.1
90°-120°	1710.2	11.5
90°-150°	5809.9	39.0
90°-180°	8035.0	53.9
0°-180°	14910.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3339	3339	3339	3339	3339	
5°	3339	3324	3284	3312	3303	317
15°	3176	3142	3040	2982	2952	895
25°	2883	2786	2587	2463	2417	1326
35°	2484	2330	2064	1874	1807	1555
45°	2031	1828	1511	1296	1224	1568
55°	1544	1308	982	801	744	1380
65°	1043	798	526	423	414	1034
75°	556	344	242	221	218	588
85°	130	66	57	57	57	149
90°	3	31	85	80	82	15
95°	126	151	155	155	151	141
105°	522	529	534	538	538	551
115°	971	984	980	978	971	960
125°	1412	1433	1426	1419	1416	1261
135°	1826	1853	1858	1855	1848	1411
145°	2217	2234	2248	2250	2241	1385
155°	2535	2542	2550	2562	2554	1167
165°	2757	2755	2755	2772	2760	778
175°	2869	2862	2857	2874	2860	273
180°	2874	2874	2874	2874	2874	



TEST NUMBER: P908766

CATALOG NUMBER: DFN2DIP-PN4F0-080D090US840-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3339.0	3339.0	3339.0	3339.0	3339.0
2.5°	3354.1	3339.0	3305.7	3336.1	3330.0
5°	3339.0	3324.0	3284.5	3311.8	3302.8
7.5°	3311.8	3293.8	3251.5	3263.4	3248.2
10°	3275.5	3254.4	3194.1	3184.8	3166.8
12.5°	3230.4	3203.1	3121.3	3103.3	3070.0
15°	3175.8	3142.5	3039.9	2982.5	2952.3
17.5°	3112.3	3063.9	2937.0	2870.6	2822.2
20°	3039.9	2979.3	2828.3	2753.0	2686.2
22.5°	2961.3	2891.7	2716.4	2613.8	2568.6
25°	2882.8	2786.0	2586.6	2462.9	2417.3
27.5°	2789.1	2686.2	2465.7	2323.7	2254.1
30°	2689.5	2574.3	2332.7	2178.8	2097.0
32.5°	2592.6	2453.6	2206.1	2024.6	1948.9
35°	2484.0	2329.8	2064.0	1873.6	1806.9
37.5°	2378.1	2211.8	1931.0	1722.2	1646.9
40°	2266.3	2085.2	1791.8	1577.3	1498.7
42.5°	2151.5	1958.2	1652.9	1429.3	1353.8
45°	2030.6	1828.1	1511.0	1296.2	1223.8
47.5°	1915.9	1701.4	1375.0	1160.2	1093.9
50°	1788.9	1574.5	1242.0	1033.3	970.1
52.5°	1664.9	1438.1	1115.0	915.6	858.3
55°	1544.0	1308.4	982.0	800.8	743.5
57.5°	1420.3	1178.5	864.3	695.1	646.6
60°	1293.2	1051.6	740.2	586.3	538.0
62.5°	1169.5	927.8	634.5	489.6	465.5
65°	1042.6	797.6	525.7	423.2	413.8
67.5°	921.7	676.8	423.2	371.5	362.6
70°	794.8	559.2	350.4	320.2	308.1
72.5°	673.9	450.1	293.1	269.0	262.9
75°	555.9	344.4	241.8	220.6	217.7
77.5°	438.3	244.6	190.5	178.2	172.2
80°	329.2	175.4	144.9	133.0	133.0
82.5°	229.5	118.0	99.7	93.6	93.6
85°	129.9	66.3	57.4	57.4	57.4
87.5°	48.4	24.0	24.0	21.2	21.2
90°	2.6	31.2	84.9	79.7	82.3
92.5°	53.7	72.8	75.4	78.0	78.0
95°	126.5	150.8	155.1	155.1	150.8
97.5°	210.6	233.1	242.7	242.7	242.7
100°	307.6	327.6	334.5	334.5	331.9
102.5°	409.9	424.6	434.1	436.8	434.1
105°	521.7	528.6	533.8	538.2	538.2
107.5°	632.6	643.0	643.0	644.7	632.6
110°	740.0	754.0	754.0	754.0	747.0



TEST NUMBER: P908766

CATALOG NUMBER: DFN2DIP-PN4F0-080D090US840-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	856.2	870.9	868.3	861.4	856.2
115°	970.6	984.4	980.1	977.5	970.6
117.5°	1084.1	1103.2	1091.1	1084.1	1077.1
120°	1198.5	1217.5	1198.5	1198.5	1190.6
122.5°	1302.4	1326.8	1314.6	1307.7	1302.4
125°	1411.7	1433.3	1426.4	1418.6	1416.0
127.5°	1518.2	1545.1	1535.6	1525.2	1518.2
130°	1617.9	1649.1	1644.8	1639.5	1630.0
132.5°	1729.7	1753.9	1755.7	1743.5	1736.7
135°	1825.8	1852.7	1858.0	1855.3	1848.5
137.5°	1933.3	1955.0	1959.3	1957.6	1947.2
140°	2027.8	2049.4	2061.5	2061.5	2052.0
142.5°	2124.9	2146.5	2153.4	2156.1	2146.5
145°	2216.8	2234.0	2247.9	2250.5	2241.0
147.5°	2299.1	2320.7	2331.1	2335.4	2325.9
150°	2384.0	2398.7	2408.2	2416.0	2408.2
152.5°	2459.3	2474.1	2486.2	2495.8	2486.2
155°	2534.8	2541.6	2549.5	2561.6	2553.8
157.5°	2599.7	2604.9	2609.3	2626.6	2614.4
160°	2657.8	2663.0	2665.6	2680.3	2669.9
162.5°	2711.5	2711.5	2714.1	2730.6	2718.5
165°	2757.4	2754.8	2754.8	2772.2	2760.1
167.5°	2799.0	2791.3	2791.3	2808.5	2796.4
170°	2830.2	2823.3	2820.8	2838.0	2823.3
172.5°	2851.9	2845.0	2842.4	2859.7	2845.0
175°	2869.2	2862.3	2857.1	2874.5	2859.7
177.5°	2878.7	2871.9	2866.6	2881.3	2866.6
180°	2874.5	2874.5	2874.5	2874.5	2874.5



TEST NUMBER: P908766
 CATALOG NUMBER: DFN2DIP-PN4F0-080D090US840-RLLFLL

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	9.87	10.67	10.87	11.68	13.00	5.84	6.64	6.83	7.64	8.97
	3H	11.55	12.27	12.56	13.28	14.63	7.02	7.74	8.03	8.75	10.10
	4H	12.16	12.84	13.18	13.85	15.21	7.47	8.15	8.49	9.17	10.52
	6H	12.58	13.20	13.61	14.22	15.59	7.79	8.42	8.82	9.44	10.81
	8H	12.71	13.30	13.74	14.34	15.70	7.88	8.48	8.92	9.51	10.88
	12H	12.77	13.33	13.81	14.36	15.75	7.93	8.49	8.97	9.52	10.91
4H	2H	9.89	10.56	10.91	11.58	12.94	6.43	7.11	7.46	8.12	9.48
	3H	11.72	12.28	12.75	13.32	14.69	7.78	8.34	8.81	9.39	10.76
	4H	12.41	12.92	13.45	13.96	15.35	8.33	8.84	9.37	9.88	11.27
	6H	12.93	13.37	13.98	14.43	15.82	8.75	9.19	9.80	10.25	11.63
	8H	13.10	13.51	14.15	14.57	15.97	8.87	9.29	9.93	10.34	11.74
	12H	13.20	13.57	14.27	14.64	16.04	8.94	9.31	10.01	10.38	11.79
8H	4H	12.38	12.79	13.43	13.84	15.24	8.61	9.02	9.66	10.07	11.47
	6H	12.94	13.28	14.02	14.38	15.78	9.12	9.46	10.20	10.56	11.96
	8H	13.16	13.46	14.24	14.54	15.96	9.32	9.62	10.40	10.69	12.11
	12H	13.30	13.56	14.39	14.64	16.10	9.44	9.70	10.52	10.77	12.23
12H	4H	12.33	12.70	13.40	13.76	15.17	8.61	8.98	9.68	10.05	11.46
	6H	12.92	13.22	14.00	14.30	15.72	9.17	9.47	10.26	10.55	11.97
	8H	13.14	13.40	14.23	14.48	15.94	9.38	9.65	10.47	10.72	12.18