

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: P908569

Luminaire Tested: DFN2DIP-PN3F0-080D090US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908569
REPORT IS A COMBINATION OF REPORTS P901125 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-080D090US840-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

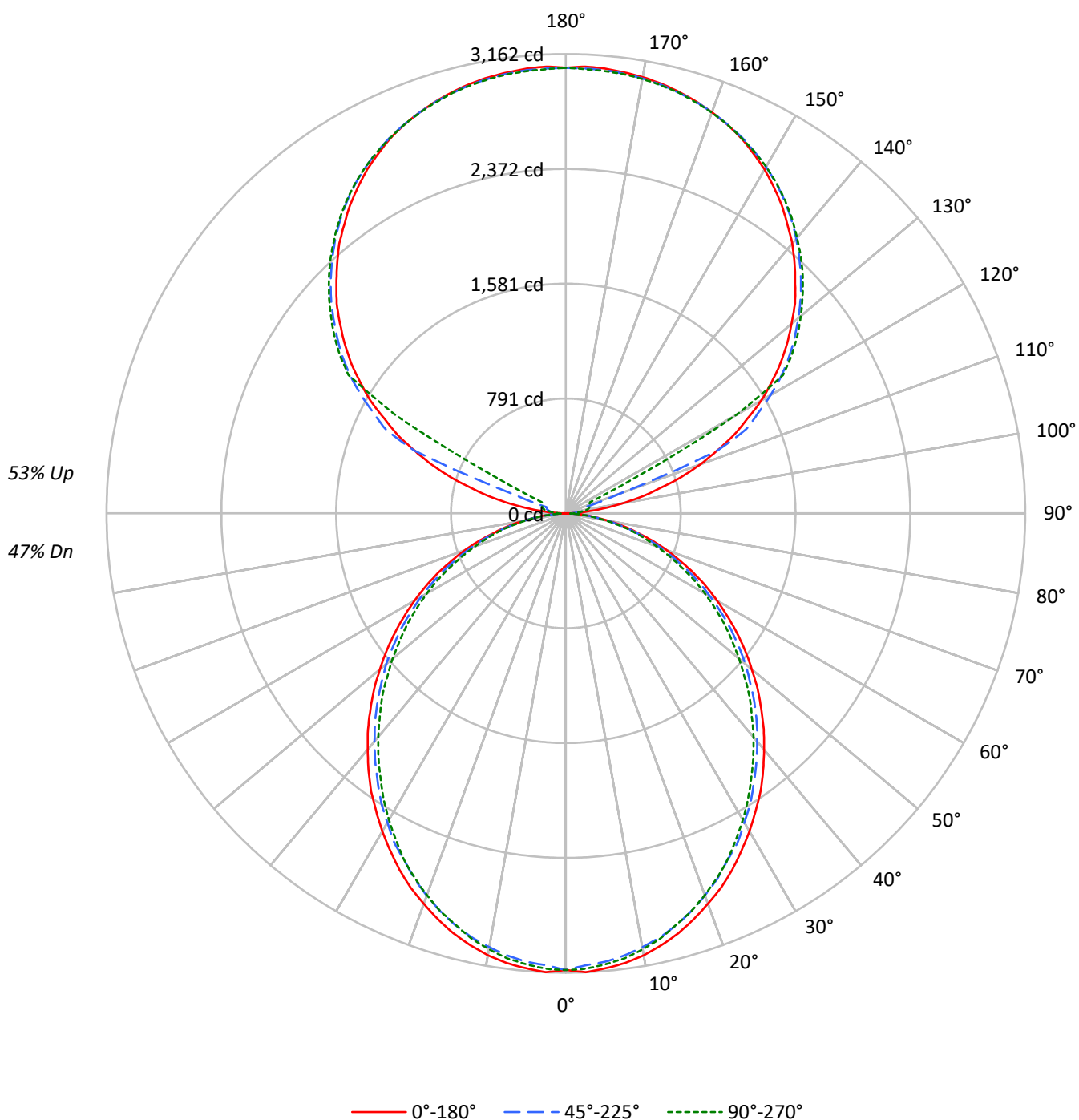
Lumens per Lamp: N/A
Luminaire Lumens: 16996.1 lumens
Efficiency: N/A
Efficacy: 112.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 151.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
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
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°	3675	3675	3675
5°	3678	3621	3646
10°	3647	3570	3596
15°	3591	3508	3517
20°	3516	3424	3436
25°	3442	3324	3343
30°	3349	3230	3226
35°	3261	3121	3101
40°	3153	3009	2983
45°	3046	2898	2862
50°	2928	2781	2721
55°	2804	2646	2592
60°	2664	2485	2444
65°	2511	2318	2269
70°	2316	2115	2080
75°	2048	1872	1904
80°	1722	1561	1570
85°	1214	1033	1024

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3046 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	295.9	1.7
10°-20°	832.5	4.9
20°-30°	1223.4	7.2
30°-40°	1420.9	8.4
40°-50°	1419.1	8.3
50°-60°	1237.5	7.3
60°-70°	914.7	5.4
70°-80°	517.6	3.0
80°-90°	142.0	0.8
90°-100°	101.2	0.6
100°-110°	377.0	2.2
110°-120°	1000.0	5.9
120°-130°	1658.6	9.8
130°-140°	1761.8	10.4
140°-150°	1637.4	9.6
150°-160°	1316.4	7.7
160°-170°	848.2	5.0
170°-180°	292.0	1.7
0°-30°	2351.8	13.8
0°-40°	3772.7	22.2
0°-60°	6429.3	37.8
0°-90°	8003.6	47.1
90°-120°	1478.2	8.7
90°-150°	6535.9	38.5
90°-180°	8992.0	52.9
0°-180°	16996.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3144	3144	3144	3144	3144	
5°	3144	3132	3098	3122	3117	298
15°	2992	2975	2935	2947	2932	843
25°	2708	2684	2633	2639	2633	1246
35°	2337	2306	2258	2240	2225	1459
45°	1902	1880	1835	1802	1790	1467
55°	1439	1421	1384	1348	1333	1287
65°	970	952	922	895	880	959
75°	508	502	487	469	475	542
85°	124	121	118	109	106	138
90°	2	27	44	56	60	16
95°	144	71	86	98	95	171
105°	675	741	135	160	169	721
115°	1276	1314	1370	342	182	1256
125°	1804	1833	1876	1891	1898	1609
135°	2233	2268	2288	2311	2306	1725
145°	2590	2588	2626	2641	2630	1620
155°	2852	2832	2859	2872	2854	1314
165°	3005	2992	2999	3014	2999	849
175°	3074	3058	3063	3078	3056	293
180°	3067	3067	3067	3067	3067	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3143.5	3143.5	3143.5	3143.5	3143.5
2.5°	3161.8	3146.7	3113.4	3143.5	3137.8
5°	3143.5	3131.7	3098.4	3122.4	3116.6
7.5°	3122.4	3104.4	3071.1	3095.4	3089.4
10°	3089.4	3068.2	3031.9	3056.0	3047.1
12.5°	3043.8	3025.9	2989.6	3004.7	2998.6
15°	2992.5	2974.6	2935.1	2947.3	2932.2
17.5°	2929.0	2911.0	2871.6	2886.7	2871.6
20°	2859.4	2841.5	2799.1	2808.1	2796.2
22.5°	2790.2	2762.9	2723.4	2723.4	2717.3
25°	2708.4	2684.3	2633.0	2638.8	2633.0
27.5°	2617.6	2596.5	2557.3	2548.3	2533.2
30°	2527.2	2502.7	2457.6	2448.6	2436.4
32.5°	2430.3	2412.4	2363.9	2345.6	2333.5
35°	2336.6	2306.5	2258.1	2239.8	2224.7
37.5°	2230.8	2203.5	2155.2	2133.9	2118.9
40°	2122.1	2097.7	2049.3	2022.4	2010.1
42.5°	2016.3	1991.9	1943.8	1913.3	1895.4
45°	1901.5	1880.3	1834.7	1801.7	1789.6
47.5°	1789.6	1768.4	1719.9	1686.6	1668.6
50°	1671.5	1656.5	1614.1	1571.8	1556.7
52.5°	1556.7	1535.5	1496.4	1463.1	1441.9
55°	1439.0	1420.7	1384.5	1348.3	1333.1
57.5°	1321.0	1306.0	1266.5	1230.2	1218.0
60°	1203.0	1191.1	1148.7	1115.4	1106.4
62.5°	1088.1	1067.0	1036.8	1006.7	994.5
65°	970.5	952.2	922.0	894.7	879.7
67.5°	849.5	834.1	807.2	786.1	773.9
70°	737.6	725.4	698.2	677.0	665.1
72.5°	622.8	610.7	595.5	574.4	565.4
75°	507.7	501.9	486.6	468.6	474.6
77.5°	405.1	392.8	386.8	377.8	368.8
80°	302.5	299.2	293.2	284.2	278.0
82.5°	205.6	205.6	202.7	190.5	190.5
85°	123.8	120.9	118.1	108.8	105.8
87.5°	54.5	48.5	42.3	33.3	30.2
90°	2.1	26.7	44.2	55.6	59.8
92.5°	55.6	46.7	53.2	57.8	59.8
95°	144.2	70.9	86.4	97.8	95.4
97.5°	259.6	77.8	113.1	119.9	122.0
100°	392.9	88.9	126.5	144.2	148.7
102.5°	539.3	535.0	131.0	155.2	162.1
105°	674.7	741.4	135.4	159.8	168.6
107.5°	832.3	887.7	140.0	164.2	173.2
110°	983.3	1029.8	388.5	166.5	175.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1125.4	1165.2	1127.5	170.8	177.6
115°	1276.2	1313.8	1369.5	341.8	182.1
117.5°	1407.1	1451.5	1489.3	1171.8	590.4
120°	1553.7	1586.9	1627.0	1653.6	1353.9
122.5°	1677.9	1713.4	1758.0	1771.1	1773.5
125°	1804.3	1833.3	1875.5	1891.1	1897.6
127.5°	1919.8	1950.9	1984.4	2006.5	2008.6
130°	2028.6	2064.3	2088.5	2112.9	2110.9
132.5°	2139.6	2168.6	2192.8	2212.9	2210.8
135°	2232.9	2268.5	2288.3	2310.7	2306.2
137.5°	2330.5	2357.0	2379.4	2401.6	2395.0
140°	2425.8	2443.8	2468.0	2488.0	2477.0
142.5°	2506.0	2521.5	2550.2	2567.9	2556.9
145°	2590.3	2587.9	2625.7	2641.2	2630.1
147.5°	2663.3	2656.8	2694.4	2705.5	2696.7
150°	2734.5	2719.0	2754.5	2767.6	2756.6
152.5°	2794.3	2776.6	2809.8	2823.3	2807.7
155°	2852.1	2832.3	2858.8	2872.1	2854.4
157.5°	2898.7	2881.0	2901.0	2916.6	2898.7
160°	2938.7	2925.3	2938.7	2951.9	2936.4
162.5°	2974.1	2960.8	2971.9	2987.5	2967.5
165°	3005.2	2991.9	2998.6	3014.1	2998.6
167.5°	3029.7	3016.3	3023.0	3038.6	3018.6
170°	3049.7	3036.3	3040.7	3056.3	3036.3
172.5°	3062.9	3049.7	3054.1	3069.7	3049.7
175°	3073.9	3058.4	3062.9	3078.4	3056.3
177.5°	3078.4	3062.9	3065.2	3080.8	3060.8
180°	3067.4	3067.4	3067.4	3067.4	3067.4

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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	11.48	12.32	12.46	13.31	14.62	11.04	11.88	12.02	12.87	14.18
	3H	13.13	13.88	14.12	14.89	16.22	12.65	13.40	13.64	14.40	15.74
	4H	13.71	14.42	14.72	15.43	16.77	13.23	13.94	14.23	14.95	16.29
	6H	14.11	14.76	15.12	15.77	17.13	13.62	14.27	14.63	15.28	16.64
	8H	14.21	14.83	15.23	15.86	17.21	13.72	14.34	14.74	15.37	16.72
	12H	14.26	14.85	15.28	15.87	17.24	13.76	14.35	14.78	15.37	16.75
4H	2H	11.93	12.64	12.95	13.65	14.99	11.58	12.29	12.59	13.30	14.64
	3H	13.79	14.38	14.81	15.42	16.77	13.39	13.98	14.41	15.02	16.37
	4H	14.50	15.04	15.53	16.07	17.45	14.08	14.62	15.11	15.65	17.03
	6H	15.01	15.47	16.05	16.52	17.90	14.58	15.05	15.62	16.10	17.48
	8H	15.15	15.59	16.19	16.63	18.02	14.73	15.16	15.77	16.21	17.60
	12H	15.22	15.62	16.28	16.67	18.07	14.78	15.18	15.84	16.24	17.63
8H	4H	14.69	15.13	15.73	16.17	17.56	14.32	14.76	15.36	15.80	17.19
	6H	15.31	15.67	16.38	16.76	18.15	14.94	15.30	16.00	16.38	17.77
	8H	15.53	15.85	16.60	16.92	18.32	15.15	15.46	16.22	16.53	17.94
	12H	15.65	15.93	16.73	17.00	18.45	15.26	15.53	16.33	16.60	18.05
12H	4H	14.67	15.07	15.73	16.13	17.52	14.31	14.71	15.37	15.76	17.16
	6H	15.34	15.66	16.41	16.73	18.13	14.98	15.29	16.05	16.36	17.77
	8H	15.58	15.85	16.65	16.92	18.37	15.20	15.48	16.28	16.55	18.00