

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: P922269

Luminaire Tested: DFN2DIP-PN4F0-040D110US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922269
REPORT IS A COMBINATION OF REPORTS P901255 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D110US940-FLLONL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

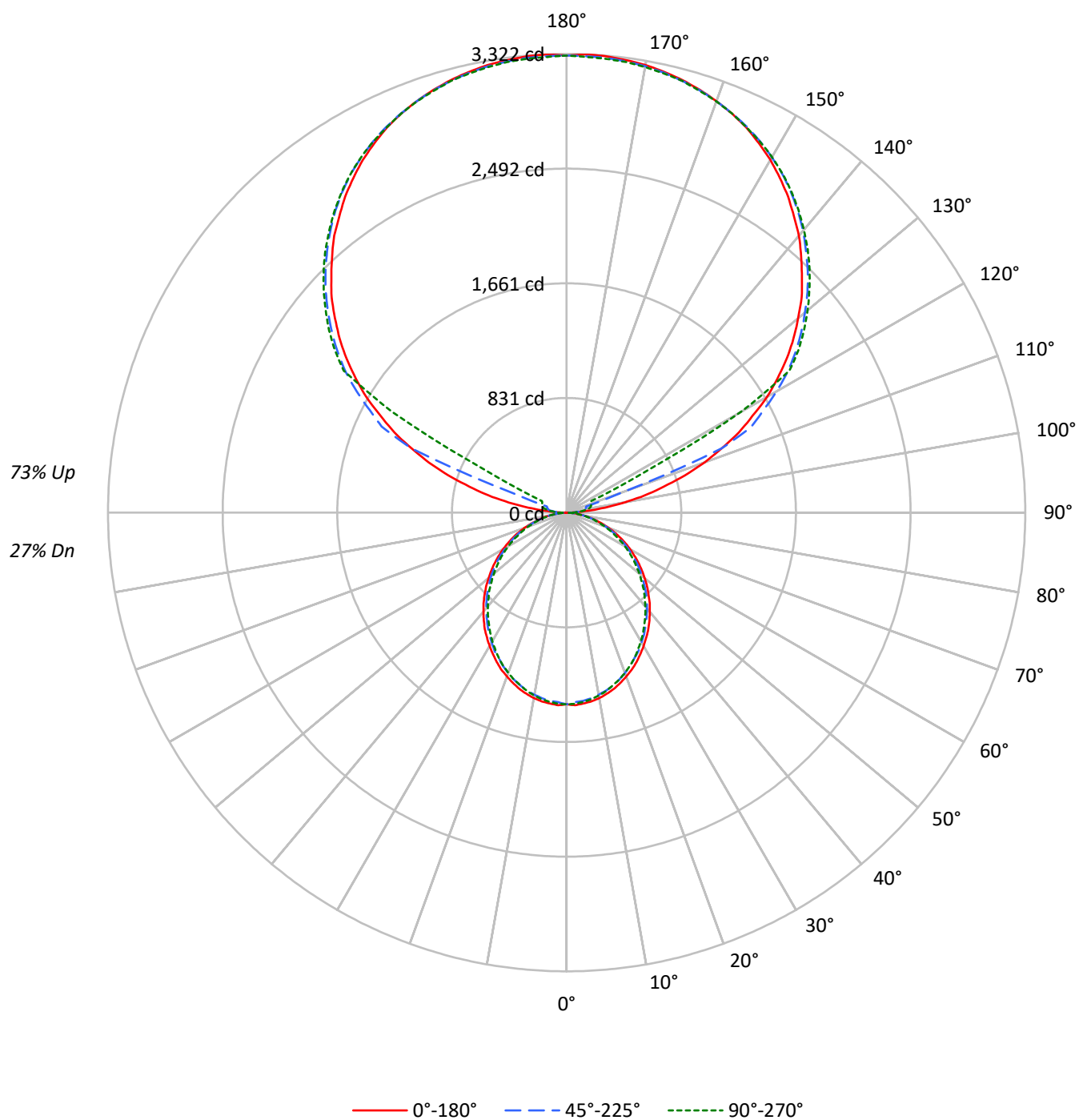
Lumens per Lamp: N/A
Luminaire Lumens: 13241.9 lumens
Efficiency: N/A
Efficacy: 105.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 125
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	102	102	102	102	91	91	91	91	70	70	70	52	52	52	35	35	35
1	93	88	85	81	82	79	76	73	62	59	58	45	44	43	31	30	29
2	84	77	71	66	75	69	64	60	54	51	48	40	38	36	27	26	25
3	77	68	61	55	68	61	55	50	47	43	40	35	33	30	24	22	21
4	70	60	52	46	62	54	47	42	42	38	34	31	28	26	21	20	18
5	64	53	45	40	57	48	41	36	38	33	29	28	25	22	19	17	16
6	59	48	40	34	53	43	36	31	34	29	25	25	22	19	17	15	14
7	55	43	35	30	49	39	32	27	30	26	22	23	20	17	16	14	12
8	50	39	31	26	45	35	28	24	28	23	19	21	18	15	15	12	11
9	47	35	28	23	42	32	25	21	25	21	17	19	16	14	13	11	10
10	44	32	25	21	39	29	23	19	23	19	15	18	14	12	12	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1013	1013	1013
5°	1015	999	1006
10°	1007	986	992
15°	992	970	971
20°	972	947	950
25°	952	920	925
30°	927	895	893
35°	903	866	859
40°	874	836	827
45°	845	806	794
50°	813	775	756
55°	780	739	722
60°	743	696	682
65°	702	652	635
70°	650	598	584
75°	578	533	538
80°	491	450	448
85°	355	307	300

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1766 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.6	1.0
10°-20°	367.5	2.8
20°-30°	540.1	4.1
30°-40°	627.3	4.7
40°-50°	626.6	4.7
50°-60°	546.3	4.1
60°-70°	403.9	3.0
70°-80°	228.5	1.7
80°-90°	66.1	0.5
90°-100°	109.2	0.8
100°-110°	406.9	3.1
110°-120°	1079.2	8.1
120°-130°	1789.9	13.5
130°-140°	1901.3	14.4
140°-150°	1767.1	13.3
150°-160°	1420.7	10.7
160°-170°	915.4	6.9
170°-180°	315.1	2.4
0°-30°	1038.3	7.8
0°-40°	1665.6	12.6
0°-60°	2838.5	21.4
0°-90°	3537.0	26.7
90°-120°	1595.3	12.0
90°-150°	7053.7	53.3
90°-180°	9705.0	73.3
0°-180°	13241.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1388	1388	1388	1388	1388	
5°	1388	1383	1368	1378	1376	132
15°	1321	1313	1296	1301	1295	372
25°	1196	1185	1162	1165	1162	550
35°	1032	1018	997	989	982	644
45°	840	830	810	796	790	648
55°	635	627	611	595	589	568
65°	428	420	407	395	388	424
75°	224	222	215	207	210	239
85°	55	53	52	48	47	61
90°	2	29	48	60	65	12
95°	156	76	93	106	103	184
105°	728	800	146	172	182	778
115°	1377	1418	1478	369	196	1356
125°	1947	1979	2024	2041	2048	1737
135°	2410	2448	2470	2494	2489	1862
145°	2796	2793	2834	2850	2838	1748
155°	3078	3057	3085	3100	3080	1418
165°	3243	3229	3236	3253	3236	916
175°	3317	3301	3306	3322	3298	316
180°	3310	3310	3310	3310	3310	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1387.9	1387.9	1387.9	1387.9	1387.9
2.5°	1396.0	1389.3	1374.6	1387.9	1385.4
5°	1387.9	1382.6	1367.9	1378.5	1376.0
7.5°	1378.5	1370.6	1355.8	1366.6	1364.0
10°	1364.0	1354.6	1338.6	1349.2	1345.2
12.5°	1343.8	1335.9	1319.9	1326.6	1323.8
15°	1321.2	1313.2	1295.8	1301.2	1294.6
17.5°	1293.2	1285.2	1267.8	1274.4	1267.8
20°	1262.4	1254.5	1235.8	1239.7	1234.6
22.5°	1231.8	1219.8	1202.4	1202.4	1199.7
25°	1195.7	1185.1	1162.4	1165.0	1162.4
27.5°	1155.7	1146.3	1129.1	1125.1	1118.5
30°	1115.7	1105.0	1085.0	1081.0	1075.7
32.5°	1073.0	1065.1	1043.7	1035.6	1030.2
35°	1031.6	1018.3	996.9	988.9	982.2
37.5°	984.9	972.9	951.5	942.2	935.5
40°	936.9	926.1	904.7	892.9	887.5
42.5°	890.2	879.4	858.2	844.7	836.8
45°	839.5	830.2	810.0	795.5	790.1
47.5°	790.1	780.7	759.4	744.7	736.7
50°	738.0	731.3	712.7	693.9	687.2
52.5°	687.2	678.0	660.7	646.0	636.6
55°	635.3	627.2	611.3	595.2	588.6
57.5°	583.2	576.6	559.1	543.1	537.8
60°	531.1	525.8	507.2	492.5	488.5
62.5°	480.5	471.1	457.8	444.4	439.1
65°	428.5	420.4	407.1	395.0	388.4
67.5°	375.1	368.3	356.4	347.1	341.7
70°	325.7	320.3	308.3	298.9	293.6
72.5°	275.0	269.6	263.0	253.6	249.6
75°	224.2	221.6	214.8	206.9	209.6
77.5°	178.8	173.4	170.8	166.7	162.8
80°	133.5	132.1	129.4	125.5	122.8
82.5°	90.8	90.8	89.5	84.1	84.1
85°	54.7	53.4	52.1	48.0	46.7
87.5°	24.1	21.4	18.7	14.7	13.3
90°	2.3	28.7	47.8	60.0	64.6
92.5°	60.0	50.4	57.4	62.3	64.6
95°	155.6	76.5	93.3	105.5	103.0
97.5°	280.2	83.9	122.0	129.4	131.7
100°	424.1	95.9	136.5	155.6	160.4
102.5°	581.9	577.4	141.3	167.6	175.0
105°	728.2	800.1	146.2	172.4	182.1
107.5°	898.3	958.0	151.1	177.2	186.9
110°	1061.2	1111.3	419.3	179.8	189.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1214.6	1257.5	1216.8	184.3	191.7
115°	1377.2	1417.9	1478.0	368.9	196.5
117.5°	1518.7	1566.5	1607.4	1264.6	637.1
120°	1676.8	1712.6	1755.9	1784.6	1461.2
122.5°	1810.8	1849.1	1897.2	1911.5	1914.1
125°	1947.3	1978.6	2024.1	2040.9	2048.0
127.5°	2071.9	2105.4	2141.5	2165.4	2167.7
130°	2189.3	2227.8	2253.9	2280.4	2278.1
132.5°	2309.1	2340.4	2366.6	2388.2	2385.9
135°	2409.8	2448.2	2469.5	2493.8	2488.9
137.5°	2515.1	2543.8	2567.9	2591.8	2584.7
140°	2618.1	2637.3	2663.5	2685.1	2673.2
142.5°	2704.5	2721.2	2752.3	2771.3	2759.4
145°	2795.5	2792.9	2833.6	2850.4	2838.5
147.5°	2874.3	2867.2	2907.9	2919.8	2910.5
150°	2951.1	2934.4	2972.7	2987.0	2975.0
152.5°	3015.7	2996.6	3032.4	3047.0	3030.2
155°	3078.0	3056.6	3085.3	3099.6	3080.5
157.5°	3128.3	3109.2	3130.9	3147.6	3128.3
160°	3171.5	3157.0	3171.5	3185.7	3169.0
162.5°	3209.6	3195.4	3207.4	3224.2	3202.6
165°	3243.2	3229.0	3236.1	3252.9	3236.1
167.5°	3269.6	3255.2	3262.6	3279.4	3257.8
170°	3291.3	3276.8	3281.6	3298.4	3276.8
172.5°	3305.5	3291.3	3296.1	3312.9	3291.3
175°	3317.4	3300.7	3305.5	3322.3	3298.4
177.5°	3322.3	3305.5	3308.1	3324.8	3303.3
180°	3310.4	3310.4	3310.4	3310.4	3310.4

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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	4.64	5.32	5.77	6.45	8.02	4.20	4.88	5.33	6.01	7.58
	3H	6.29	6.90	7.43	8.04	9.62	5.80	6.42	6.95	7.55	9.14
	4H	6.87	7.45	8.02	8.59	10.18	6.38	6.97	7.53	8.10	9.69
	6H	7.26	7.80	8.42	8.94	10.54	6.77	7.31	7.93	8.44	10.04
	8H	7.36	7.87	8.53	9.03	10.62	6.87	7.38	8.03	8.53	10.13
	12H	7.41	7.89	8.57	9.04	10.65	6.91	7.39	8.07	8.54	10.15
4H	2H	5.08	5.66	6.24	6.80	8.39	4.73	5.31	5.89	6.44	8.03
	3H	6.93	7.42	8.10	8.58	10.18	6.53	7.02	7.69	8.18	9.78
	4H	7.64	8.09	8.81	9.24	10.86	7.22	7.67	8.39	8.82	10.44
	6H	8.15	8.53	9.32	9.70	11.31	7.72	8.11	8.90	9.28	10.89
	8H	8.30	8.65	9.47	9.82	11.44	7.87	8.22	9.04	9.39	11.02
	12H	8.36	8.69	9.55	9.86	11.49	7.92	8.25	9.11	9.42	11.05
8H	4H	7.82	8.18	8.99	9.34	10.97	7.45	7.81	8.62	8.97	10.60
	6H	8.45	8.75	9.64	9.95	11.57	8.07	8.37	9.26	9.57	11.20
	8H	8.67	8.93	9.87	10.11	11.76	8.29	8.54	9.48	9.73	11.37
	12H	8.80	9.02	10.00	10.20	11.88	8.40	8.62	9.59	9.80	11.48
12H	4H	7.80	8.13	8.99	9.30	10.93	7.44	7.76	8.63	8.94	10.57
	6H	8.48	8.74	9.68	9.92	11.56	8.11	8.37	9.31	9.55	11.20
	8H	8.72	8.94	9.91	10.12	11.80	8.34	8.57	9.54	9.75	11.43

END OF REPORT