

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: P922261

Luminaire Tested: DFN2DIP-PN4F0-040D090US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922261
REPORT IS A COMBINATION OF REPORTS P901219 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D090US940-FLLONL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

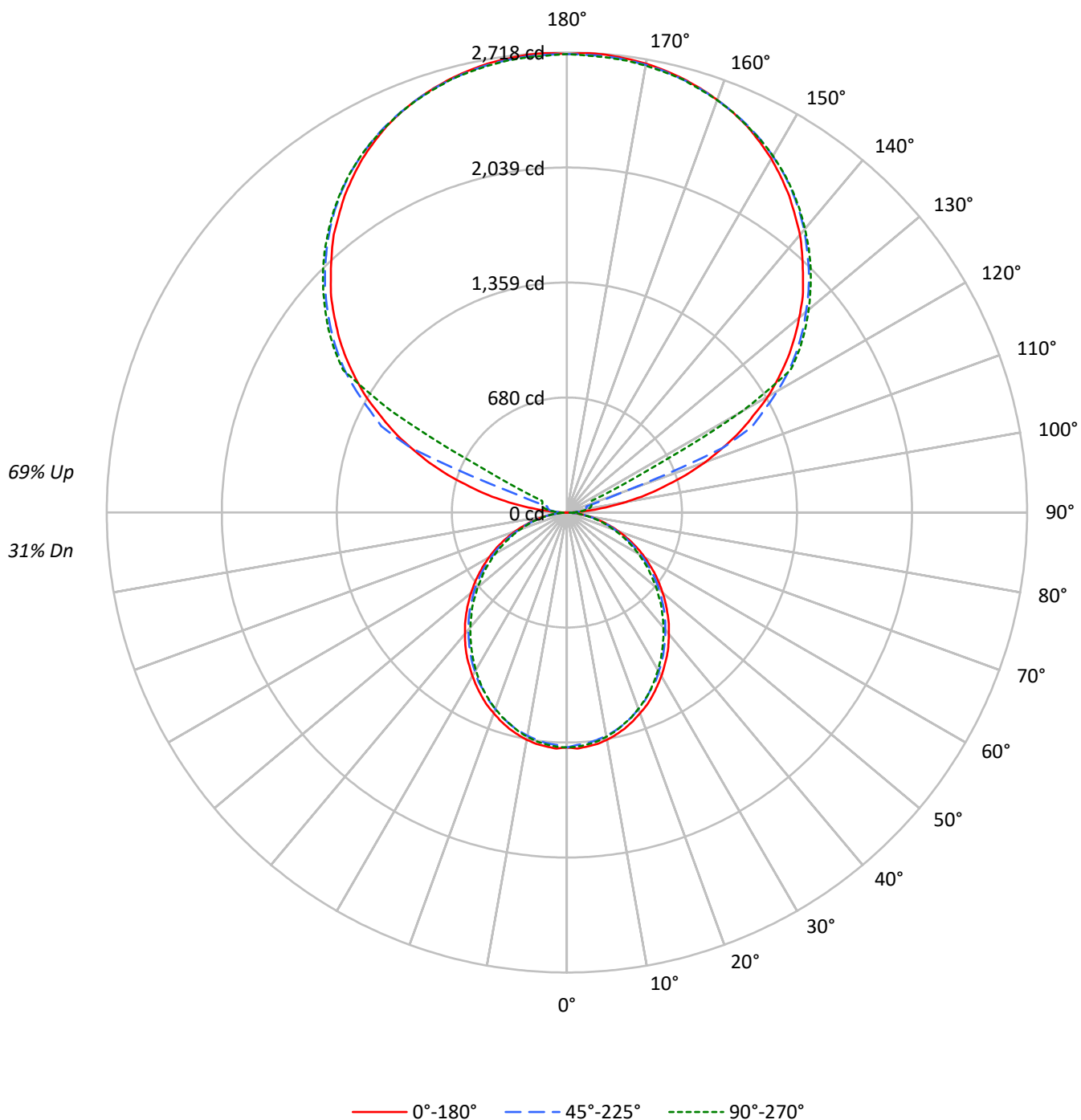
Lumens per Lamp: N/A
Luminaire Lumens: 11476.3 lumens
Efficiency: N/A
Efficacy: 114.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 100
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

TEST NUMBER: P922261

CATALOG NUMBER: DFN2DIP-PN4F0-040D090US940-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P922261

CATALOG NUMBER: DFN2DIP-PN4F0-040D090US940-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	103	103	103	103	92	92	92	92	73	73	73	55	55	55	38	38	38
1	93	89	86	82	84	80	77	74	64	61	59	48	47	46	34	33	32
2	85	78	72	67	76	70	65	61	56	52	49	42	40	38	30	29	27
3	78	68	61	56	69	62	56	51	49	45	41	37	35	32	26	25	23
4	71	60	53	47	63	55	48	43	44	39	35	33	30	27	24	22	20
5	65	54	46	40	58	49	42	37	39	34	30	30	26	24	21	19	17
6	60	48	40	35	53	44	37	32	35	30	26	27	23	21	19	17	15
7	55	43	36	30	49	39	33	28	32	27	23	24	21	18	18	15	14
8	51	39	32	27	46	36	29	24	29	24	20	22	19	16	16	14	12
9	47	36	28	24	43	32	26	22	26	21	18	20	17	14	15	13	11
10	44	33	26	21	40	30	23	19	24	19	16	19	15	13	14	12	10

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: 1443 cd/sqm

TEST NUMBER: P922261

CATALOG NUMBER: DFN2DIP-PN4F0-040D090US940-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.6	1.1
10°-20°	367.5	3.2
20°-30°	540.1	4.7
30°-40°	627.3	5.5
40°-50°	626.6	5.5
50°-60°	546.3	4.8
60°-70°	403.9	3.5
70°-80°	228.5	2.0
80°-90°	65.1	0.6
90°-100°	89.3	0.8
100°-110°	332.9	2.9
110°-120°	883.0	7.7
120°-130°	1464.5	12.8
130°-140°	1555.6	13.6
140°-150°	1445.8	12.6
150°-160°	1162.4	10.1
160°-170°	749.0	6.5
170°-180°	257.8	2.2
0°-30°	1038.3	9.0
0°-40°	1665.6	14.5
0°-60°	2838.5	24.7
0°-90°	3536.0	30.8
90°-120°	1305.2	11.4
90°-150°	5771.2	50.3
90°-180°	7940.0	69.2
0°-180°	11476.3	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	24	39	49	53	11
95°	127	63	76	86	84	151
105°	596	655	120	141	149	637
115°	1127	1160	1209	302	161	1109
125°	1593	1619	1656	1670	1676	1421
135°	1972	2003	2020	2040	2036	1523
145°	2287	2285	2318	2332	2322	1431
155°	2518	2501	2524	2536	2520	1161
165°	2654	2642	2648	2662	2648	750
175°	2714	2700	2705	2718	2699	258
180°	2708	2708	2708	2708	2708	

TEST NUMBER: P922261

CATALOG NUMBER: DFN2DIP-PN4F0-040D090US940-FLLONL

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°	1.9	23.5	39.1	49.1	52.8
92.5°	49.1	41.2	47.0	51.0	52.8
95°	127.3	62.6	76.3	86.3	84.3
97.5°	229.3	68.7	99.9	105.8	107.7
100°	347.0	78.5	111.7	127.3	131.3
102.5°	476.2	472.4	115.7	137.1	143.1
105°	595.8	654.7	119.6	141.1	148.9
107.5°	734.9	783.8	123.6	145.0	152.9
110°	868.3	909.3	343.0	147.0	154.8

TEST NUMBER: P922261

CATALOG NUMBER: DFN2DIP-PN4F0-040D090US940-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	993.7	1028.9	995.6	150.8	156.9
115°	1126.9	1160.1	1209.2	301.8	160.8
117.5°	1242.5	1281.7	1315.1	1034.7	521.3
120°	1371.9	1401.2	1436.6	1460.1	1195.5
122.5°	1481.6	1513.0	1552.3	1563.9	1566.0
125°	1593.2	1618.8	1656.1	1669.8	1675.6
127.5°	1695.1	1722.6	1752.2	1771.7	1773.6
130°	1791.3	1822.7	1844.1	1865.7	1863.9
132.5°	1889.3	1914.9	1936.3	1954.0	1952.1
135°	1971.7	2003.0	2020.5	2040.3	2036.4
137.5°	2057.8	2081.3	2101.0	2120.6	2114.8
140°	2142.0	2157.8	2179.3	2196.9	2187.2
142.5°	2212.8	2226.5	2251.8	2267.4	2257.7
145°	2287.2	2285.1	2318.4	2332.2	2322.4
147.5°	2351.7	2345.9	2379.2	2389.0	2381.2
150°	2414.6	2400.8	2432.2	2443.8	2434.1
152.5°	2467.4	2451.8	2481.1	2493.0	2479.2
155°	2518.4	2500.9	2524.3	2536.0	2520.4
157.5°	2559.6	2544.0	2561.6	2575.3	2559.6
160°	2594.9	2583.0	2594.9	2606.6	2592.8
162.5°	2626.1	2614.4	2624.2	2637.9	2620.3
165°	2653.6	2641.9	2647.8	2661.5	2647.8
167.5°	2675.2	2663.4	2669.3	2683.1	2665.4
170°	2692.9	2681.0	2684.9	2698.7	2681.0
172.5°	2704.6	2692.9	2696.8	2710.5	2692.9
175°	2714.3	2700.5	2704.6	2718.2	2698.7
177.5°	2718.2	2704.6	2706.6	2720.3	2702.7
180°	2708.5	2708.5	2708.5	2708.5	2708.5

TEST NUMBER: P922261

CATALOG NUMBER: DFN2DIP-PN4F0-040D090US940-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	5.22	5.93	6.33	7.03	8.56	4.78	5.49	5.89	6.59	8.11
	3H	6.87	7.51	7.99	8.62	10.16	6.39	7.02	7.50	8.14	9.67
	4H	7.45	8.06	8.58	9.17	10.71	6.97	7.57	8.09	8.68	10.23
	6H	7.85	8.41	8.98	9.52	11.08	7.36	7.91	8.49	9.03	10.58
	8H	7.95	8.48	9.09	9.61	11.16	7.46	7.99	8.59	9.12	10.67
	12H	7.99	8.50	9.14	9.62	11.19	7.49	8.00	8.64	9.12	10.69
4H	2H	5.66	6.27	6.80	7.38	8.92	5.31	5.92	6.44	7.03	8.57
	3H	7.52	8.02	8.66	9.16	10.72	7.12	7.62	8.25	8.76	10.31
	4H	8.23	8.69	9.37	9.82	11.40	7.81	8.28	8.95	9.40	10.98
	6H	8.74	9.14	9.89	10.29	11.85	8.31	8.71	9.46	9.86	11.43
	8H	8.89	9.26	10.03	10.40	11.98	8.46	8.83	9.60	9.97	11.55
	12H	8.95	9.29	10.12	10.44	12.03	8.51	8.85	9.68	10.00	11.59
8H	4H	8.41	8.79	9.56	9.93	11.51	8.04	8.41	9.19	9.56	11.14
	6H	9.04	9.35	10.21	10.53	12.11	8.67	8.97	9.83	10.16	11.74
	8H	9.26	9.53	10.44	10.69	12.29	8.88	9.15	10.05	10.31	11.91
	12H	9.39	9.63	10.57	10.78	12.42	8.99	9.22	10.16	10.38	12.02
12H	4H	8.39	8.73	9.56	9.88	11.47	8.03	8.37	9.19	9.52	11.11
	6H	9.07	9.34	10.24	10.50	12.10	8.71	8.97	9.88	10.14	11.74
	8H	9.31	9.54	10.48	10.70	12.34	8.94	9.17	10.11	10.33	11.96

END OF REPORT