

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: P916811

Luminaire Tested: DFN2DIP-PN4F0-040D100US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916811
REPORT IS A COMBINATION OF REPORTS P901238 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D100US930-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

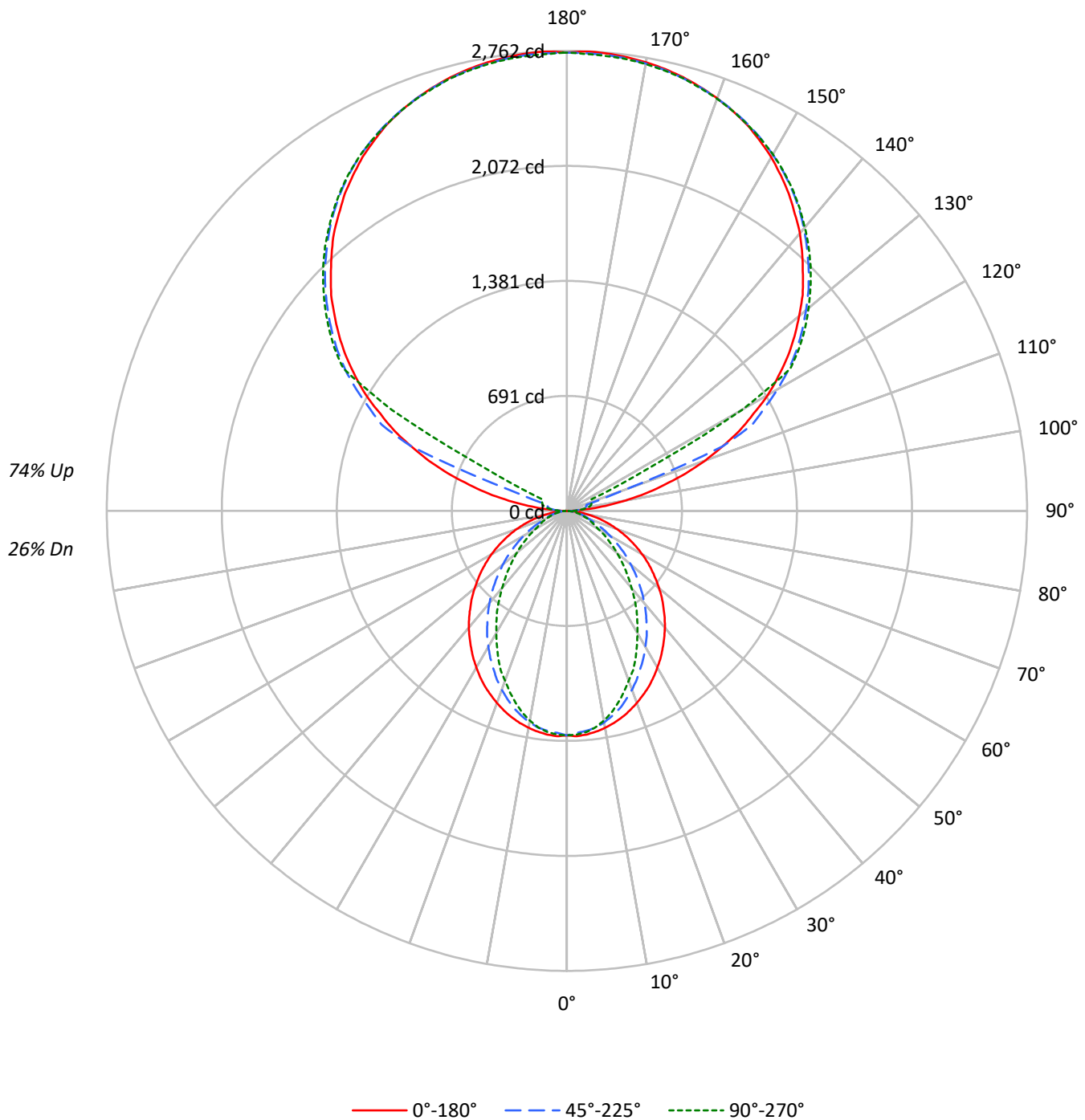
Lumens per Lamp: N/A
Luminaire Lumens: 10843.5 lumens
Efficiency: N/A
Efficacy: 100.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 108.3
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: P916811

CATALOG NUMBER: DFN2DIP-PN4F0-040D100US930-RLLONL

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	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34
1	93	88	85	82	82	79	76	73	61	59	58	45	44	43	30	29	29
2	84	77	72	67	75	69	65	60	54	51	48	40	38	36	27	26	25
3	77	68	61	56	69	61	55	51	48	44	41	35	33	31	24	23	21
4	71	60	53	47	63	54	48	43	43	38	35	32	29	26	22	20	19
5	65	54	46	41	58	48	42	37	38	33	30	28	25	23	19	18	16
6	60	48	41	35	53	43	37	32	34	30	26	26	23	20	18	16	14
7	55	43	36	31	49	39	33	28	31	26	23	23	20	18	16	14	13
8	51	39	32	27	45	36	29	25	28	24	20	21	18	16	15	13	12
9	47	36	29	24	42	32	26	22	26	21	18	20	16	14	14	12	10
10	44	33	26	21	39	30	24	20	24	19	16	18	15	13	13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	984	984	984
5°	985	968	975
10°	976	949	943
15°	962	918	894
20°	944	875	834
25°	926	827	776
30°	902	777	703
35°	878	724	638
40°	854	669	564
45°	825	607	497
50°	796	545	431
55°	765	479	368
60°	730	410	303
65°	689	340	273
70°	640	274	247
75°	578	242	225
80°	488	203	196
85°	340	137	149

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1465 cd/sqm

TEST NUMBER: P916811

CATALOG NUMBER: DFN2DIP-PN4F0-040D100US930-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.3	1.2
10°-20°	346.8	3.2
20°-30°	486.9	4.5
30°-40°	530.7	4.9
40°-50°	487.8	4.5
50°-60°	383.1	3.5
60°-70°	249.3	2.3
70°-80°	128.4	1.2
80°-90°	37.6	0.3
90°-100°	90.7	0.8
100°-110°	338.2	3.1
110°-120°	897.0	8.3
120°-130°	1487.8	13.7
130°-140°	1580.4	14.6
140°-150°	1468.8	13.5
150°-160°	1180.9	10.9
160°-170°	760.9	7.0
170°-180°	261.9	2.4
0°-30°	960.0	8.9
0°-40°	1490.7	13.7
0°-60°	2361.5	21.8
0°-90°	2776.9	25.6
90°-120°	1326.0	12.2
90°-150°	5862.9	54.1
90°-180°	8067.0	74.4
0°-180°	10843.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1348	1348	1348	1348	1348	
5°	1348	1342	1326	1337	1333	128
15°	1282	1268	1227	1204	1192	361
25°	1164	1125	1044	994	976	535
35°	1003	940	833	756	729	628
45°	820	738	610	523	494	633
55°	623	528	396	323	300	557
65°	421	322	212	171	167	417
75°	224	139	98	89	88	237
85°	52	27	23	23	23	60
90°	2	24	40	50	54	10
95°	129	64	78	88	86	153
105°	605	665	122	143	151	647
115°	1145	1179	1228	307	163	1127
125°	1619	1645	1682	1696	1702	1444
135°	2003	2035	2053	2073	2069	1547
145°	2324	2322	2355	2369	2359	1453
155°	2558	2541	2564	2576	2560	1179
165°	2696	2684	2690	2704	2690	762
175°	2757	2744	2748	2762	2742	262
180°	2752	2752	2752	2752	2752	

TEST NUMBER: P916811

CATALOG NUMBER: DFN2DIP-PN4F0-040D100US930-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1347.9	1347.9	1347.9	1347.9	1347.9
2.5°	1354.0	1347.9	1334.4	1346.7	1344.2
5°	1347.9	1341.7	1325.8	1336.8	1333.3
7.5°	1336.8	1329.6	1312.5	1317.3	1311.2
10°	1322.3	1313.7	1289.3	1285.6	1278.4
12.5°	1304.0	1293.0	1260.0	1252.7	1239.3
15°	1282.0	1268.5	1227.1	1204.0	1191.8
17.5°	1256.4	1236.8	1185.5	1158.8	1139.2
20°	1227.1	1202.6	1141.7	1111.3	1084.3
22.5°	1195.4	1167.3	1096.5	1055.1	1036.9
25°	1163.7	1124.6	1044.1	994.2	975.7
27.5°	1125.9	1084.3	995.3	938.0	909.9
30°	1085.7	1039.2	941.6	879.5	846.5
32.5°	1046.6	990.4	890.5	817.3	786.7
35°	1002.7	940.4	833.2	756.3	729.4
37.5°	960.0	892.8	779.4	695.2	664.8
40°	914.8	841.7	723.3	636.7	605.0
42.5°	868.5	790.4	667.2	576.9	546.5
45°	819.7	737.9	609.9	523.3	494.0
47.5°	773.4	686.8	555.1	468.4	441.6
50°	722.1	635.5	501.3	417.1	391.6
52.5°	672.1	580.6	450.1	369.6	346.4
55°	623.3	528.2	396.4	323.3	300.1
57.5°	573.3	475.7	348.9	280.5	261.1
60°	522.0	424.4	298.8	236.7	217.2
62.5°	472.1	374.5	256.1	197.6	187.9
65°	420.9	322.0	212.2	170.8	167.1
67.5°	372.1	273.2	170.8	150.0	146.3
70°	320.8	225.7	141.5	129.3	124.3
72.5°	272.1	181.7	118.3	108.6	106.2
75°	224.4	139.0	97.6	89.0	87.9
77.5°	176.9	98.7	76.9	72.0	69.5
80°	132.9	70.8	58.5	53.7	53.7
82.5°	92.7	47.6	40.3	37.7	37.7
85°	52.4	26.8	23.2	23.2	23.2
87.5°	19.6	9.7	9.7	8.6	8.6
90°	1.9	23.9	39.7	49.9	53.6
92.5°	49.9	41.8	47.8	51.8	53.6
95°	129.3	63.6	77.5	87.7	85.6
97.5°	232.8	69.7	101.4	107.5	109.5
100°	352.5	79.7	113.5	129.3	133.4
102.5°	483.7	480.0	117.5	139.3	145.4
105°	605.3	665.0	121.6	143.2	151.3
107.5°	746.7	796.3	125.6	147.3	155.3
110°	882.1	923.7	348.5	149.4	157.2

TEST NUMBER: P916811

CATALOG NUMBER: DFN2DIP-PN4F0-040D100US930-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1009.5	1045.2	1011.5	153.2	159.4
115°	1144.8	1178.6	1228.5	306.6	163.4
117.5°	1262.2	1302.0	1336.0	1051.2	529.6
120°	1393.8	1423.5	1459.5	1483.4	1214.5
122.5°	1505.1	1537.0	1576.9	1588.8	1590.9
125°	1618.6	1644.6	1682.4	1696.4	1702.3
127.5°	1722.2	1750.0	1780.0	1799.9	1801.8
130°	1819.7	1851.7	1873.5	1895.4	1893.5
132.5°	1919.3	1945.3	1967.1	1985.0	1983.1
135°	2003.0	2034.9	2052.7	2072.7	2068.7
137.5°	2090.5	2114.4	2134.5	2154.3	2148.4
140°	2176.0	2192.2	2213.9	2231.9	2221.9
142.5°	2247.9	2261.9	2287.6	2303.5	2293.6
145°	2323.6	2321.5	2355.3	2369.3	2359.3
147.5°	2389.1	2383.2	2417.0	2426.9	2419.2
150°	2452.9	2439.0	2470.9	2482.7	2472.8
152.5°	2506.6	2490.7	2520.6	2532.6	2518.6
155°	2558.4	2540.6	2564.5	2576.3	2560.5
157.5°	2600.2	2584.4	2602.4	2616.3	2600.2
160°	2636.2	2624.1	2636.2	2648.0	2634.1
162.5°	2667.8	2656.0	2665.9	2679.9	2661.9
165°	2695.7	2683.9	2689.8	2703.8	2689.8
167.5°	2717.7	2705.6	2711.8	2725.8	2707.8
170°	2735.7	2723.7	2727.7	2741.6	2723.7
172.5°	2747.5	2735.7	2739.7	2753.7	2735.7
175°	2757.4	2743.5	2747.5	2761.5	2741.6
177.5°	2761.5	2747.5	2749.7	2763.6	2745.6
180°	2751.6	2751.6	2751.6	2751.6	2751.6

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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	4.22	4.89	5.37	6.02	7.60	0.19	0.85	1.33	1.98	3.57
	3H	5.89	6.48	7.04	7.62	9.22	1.36	1.96	2.52	3.10	4.70
	4H	6.49	7.06	7.65	8.20	9.80	1.81	2.37	2.97	3.51	5.11
	6H	6.91	7.43	8.08	8.57	10.18	2.12	2.64	3.29	3.78	5.40
	8H	7.03	7.52	8.20	8.68	10.29	2.21	2.70	3.38	3.86	5.46
	12H	7.09	7.56	8.26	8.71	10.34	2.24	2.71	3.42	3.86	5.49
4H	2H	4.22	4.78	5.39	5.92	7.53	0.76	1.33	1.93	2.47	4.07
	3H	6.04	6.51	7.21	7.67	9.29	2.10	2.57	3.27	3.73	5.35
	4H	6.72	7.16	7.90	8.31	9.95	2.64	3.07	3.82	4.23	5.86
	6H	7.23	7.60	8.41	8.78	10.40	3.05	3.42	4.23	4.60	6.22
	8H	7.41	7.75	8.59	8.92	10.56	3.18	3.52	4.36	4.69	6.33
	12H	7.50	7.81	8.69	8.99	10.63	3.24	3.55	4.43	4.73	6.37
8H	4H	6.68	7.03	7.86	8.19	9.83	2.91	3.26	4.09	4.42	6.06
	6H	7.24	7.53	8.44	8.74	10.38	3.42	3.71	4.62	4.92	6.56
	8H	7.46	7.71	8.67	8.90	10.55	3.62	3.86	4.82	5.05	6.71
	12H	7.59	7.81	8.80	9.00	10.69	3.73	3.94	4.94	5.13	6.82
12H	4H	6.62	6.94	7.82	8.12	9.76	2.91	3.22	4.10	4.40	6.05
	6H	7.22	7.47	8.42	8.65	10.31	3.47	3.72	4.68	4.91	6.57
	8H	7.43	7.65	8.64	8.84	10.53	3.68	3.89	4.89	5.08	6.77