

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: P916881

Luminaire Tested: DFN2DIP-PN4F0-060D100US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916881
REPORT IS A COMBINATION OF REPORTS P901241 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-060D100US930-FLLONL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

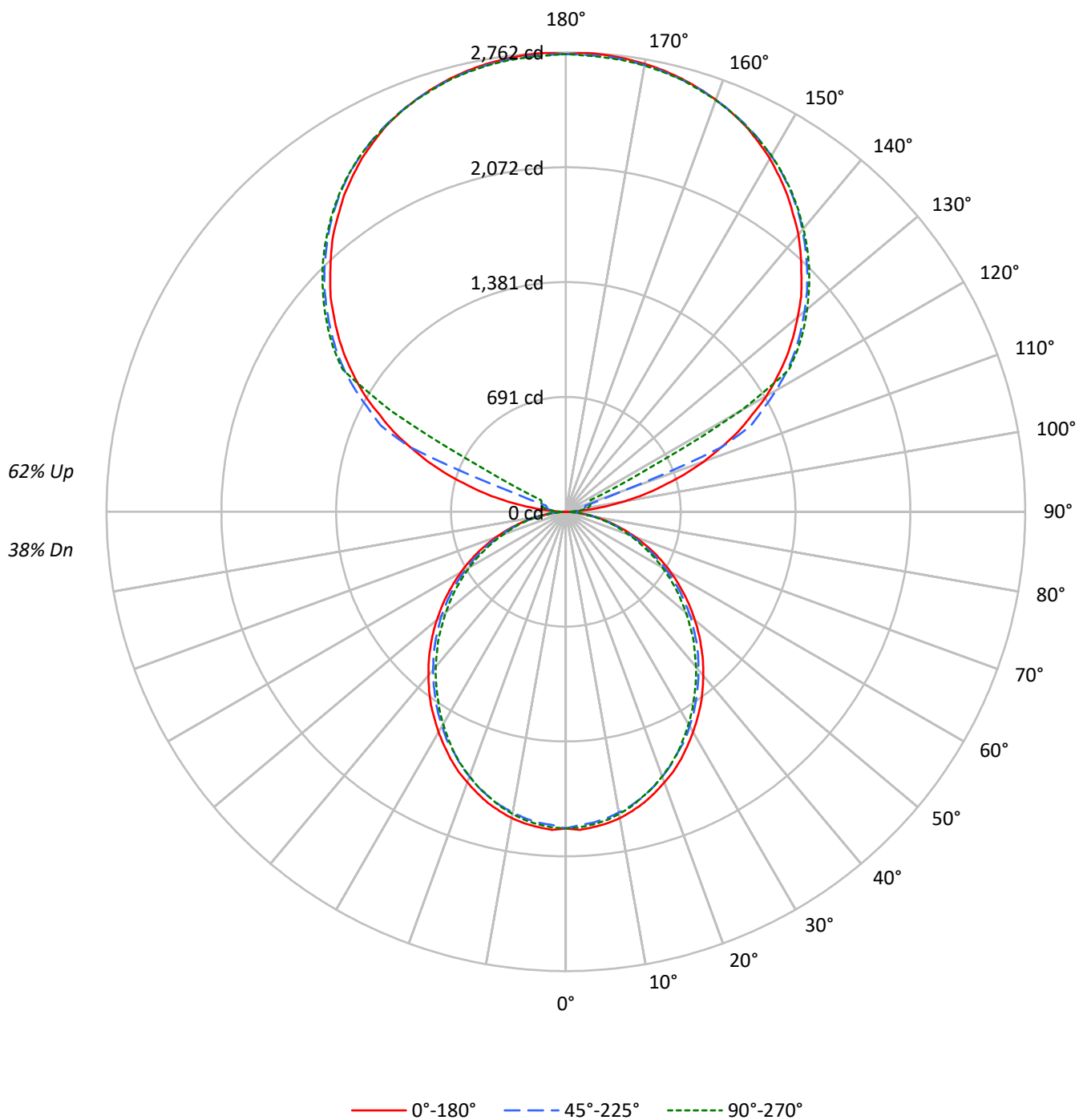
Lumens per Lamp: N/A
Luminaire Lumens: 12914.3 lumens
Efficiency: N/A
Efficacy: 99.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 129.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P916881

CATALOG NUMBER: DFN2DIP-PN4F0-060D100US930-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P916881

CATALOG NUMBER: DFN2DIP-PN4F0-060D100US930-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	104	104	104	104	94	94	94	94	76	76	76	60	60	60	45	45	45
1	95	91	87	83	86	82	79	76	67	65	63	53	51	50	39	39	38
2	86	79	73	68	78	72	67	63	59	55	52	46	44	42	35	33	32
3	79	70	62	57	71	63	57	52	52	47	44	41	38	35	31	29	27
4	72	62	54	48	65	56	49	44	46	41	37	36	33	30	27	25	23
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	25	22	20
6	61	49	41	35	55	45	38	33	37	32	28	29	26	23	22	20	18
7	56	44	36	31	51	40	34	29	33	28	24	27	23	20	20	18	16
8	52	40	32	27	47	37	30	25	30	25	22	24	21	18	19	16	14
9	48	36	29	24	44	33	27	23	28	23	19	22	19	16	17	15	13
10	45	33	26	22	41	31	24	20	26	21	17	21	17	14	16	13	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1389	1389	1389
5°	1392	1370	1380
10°	1380	1352	1361
15°	1360	1330	1332
20°	1333	1299	1303
25°	1305	1262	1268
30°	1271	1228	1225
35°	1239	1188	1178
40°	1199	1147	1134
45°	1159	1106	1089
50°	1116	1063	1037
55°	1070	1014	990
60°	1019	955	935
65°	962	894	870
70°	891	819	801
75°	792	730	737
80°	673	617	615
85°	486	421	411

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1465 cd/sqm

TEST NUMBER: P916881

CATALOG NUMBER: DFN2DIP-PN4F0-060D100US930-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	179.1	1.4
10°-20°	504.1	3.9
20°-30°	740.8	5.7
30°-40°	860.4	6.7
40°-50°	859.3	6.7
50°-60°	749.3	5.8
60°-70°	553.9	4.3
70°-80°	313.4	2.4
80°-90°	87.6	0.7
90°-100°	90.7	0.7
100°-110°	338.2	2.6
110°-120°	897.0	6.9
120°-130°	1487.8	11.5
130°-140°	1580.4	12.2
140°-150°	1468.8	11.4
150°-160°	1180.9	9.1
160°-170°	760.9	5.9
170°-180°	261.9	2.0
0°-30°	1424.0	11.0
0°-40°	2284.3	17.7
0°-60°	3892.9	30.1
0°-90°	4847.7	37.5
90°-120°	1326.0	10.3
90°-150°	5862.9	45.4
90°-180°	8067.0	62.5
0°-180°	12914.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1903	1903	1903	1903	1903	
5°	1903	1896	1876	1891	1887	181
15°	1812	1801	1777	1785	1776	510
25°	1640	1625	1594	1598	1594	755
35°	1415	1397	1367	1356	1347	884
45°	1151	1138	1111	1091	1084	889
55°	871	860	838	816	807	779
65°	588	577	558	542	533	581
75°	307	304	295	284	287	328
85°	75	73	71	66	64	84
90°	2	24	40	50	54	12
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: P916881

CATALOG NUMBER: DFN2DIP-PN4F0-060D100US930-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1903.4	1903.4	1903.4	1903.4	1903.4
2.5°	1914.5	1905.4	1885.1	1903.4	1899.9
5°	1903.4	1896.2	1876.0	1890.6	1887.1
7.5°	1890.6	1879.8	1859.5	1874.3	1870.6
10°	1870.6	1857.8	1835.8	1850.4	1844.9
12.5°	1843.1	1832.1	1810.2	1819.3	1815.7
15°	1811.9	1801.1	1777.2	1784.6	1775.5
17.5°	1773.5	1762.7	1738.8	1747.8	1738.8
20°	1731.4	1720.5	1694.8	1700.3	1693.1
22.5°	1689.5	1672.9	1649.0	1649.0	1645.4
25°	1639.9	1625.4	1594.2	1597.7	1594.2
27.5°	1584.9	1572.1	1548.4	1543.0	1533.9
30°	1530.2	1515.4	1488.1	1482.6	1475.2
32.5°	1471.5	1460.7	1431.3	1420.2	1412.9
35°	1414.9	1396.6	1367.3	1356.2	1347.0
37.5°	1350.8	1334.2	1305.0	1292.1	1283.0
40°	1284.9	1270.2	1240.9	1224.6	1217.2
42.5°	1220.8	1206.1	1177.0	1158.5	1147.6
45°	1151.4	1138.5	1110.9	1091.0	1083.5
47.5°	1083.5	1070.7	1041.5	1021.2	1010.3
50°	1012.1	1003.0	977.4	951.7	942.6
52.5°	942.6	929.8	906.0	885.9	873.1
55°	871.3	860.2	838.3	816.4	807.2
57.5°	799.9	790.8	766.9	744.9	737.5
60°	728.4	721.2	695.6	675.4	669.9
62.5°	658.8	646.0	627.8	609.5	602.2
65°	587.6	576.6	558.3	541.8	532.6
67.5°	514.4	505.1	488.8	476.0	468.6
70°	446.6	439.3	422.7	409.9	402.8
72.5°	377.1	369.7	360.6	347.8	342.3
75°	307.4	303.9	294.6	283.7	287.4
77.5°	245.2	237.9	234.2	228.8	223.3
80°	183.1	181.2	177.5	172.0	168.4
82.5°	124.5	124.5	122.7	115.4	115.4
85°	74.9	73.2	71.4	65.8	64.1
87.5°	33.0	29.4	25.6	20.2	18.3
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: P916881

CATALOG NUMBER: DFN2DIP-PN4F0-060D100US930-FLLONL

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

TEST NUMBER: P916881

CATALOG NUMBER: DFN2DIP-PN4F0-060D100US930-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	7.15	7.91	8.20	8.97	10.41	6.71	7.47	7.76	8.53	9.96
	3H	8.80	9.48	9.87	10.55	12.01	8.32	9.00	9.38	10.07	11.52
	4H	9.39	10.03	10.46	11.10	12.57	8.90	9.54	9.98	10.62	12.08
	6H	9.78	10.38	10.87	11.45	12.93	9.29	9.89	10.38	10.96	12.44
	8H	9.89	10.45	10.98	11.54	13.01	9.39	9.96	10.49	11.05	12.52
	12H	9.93	10.47	11.03	11.55	13.05	9.43	9.97	10.53	11.05	12.55
4H	2H	7.60	8.24	8.68	9.31	10.78	7.24	7.89	8.33	8.96	10.42
	3H	9.46	9.99	10.55	11.09	12.57	9.05	9.59	10.14	10.69	12.17
	4H	10.17	10.66	11.26	11.75	13.25	9.75	10.24	10.85	11.33	12.83
	6H	10.68	11.10	11.78	12.22	13.71	10.25	10.68	11.36	11.79	13.28
	8H	10.83	11.22	11.93	12.33	13.84	10.40	10.80	11.50	11.90	13.41
	12H	10.90	11.26	12.02	12.37	13.89	10.46	10.82	11.58	11.93	13.45
8H	4H	10.36	10.75	11.46	11.86	13.36	9.99	10.38	11.09	11.48	12.99
	6H	10.99	11.31	12.11	12.46	13.96	10.61	10.94	11.74	12.08	13.59
	8H	11.21	11.49	12.34	12.62	14.15	10.82	11.11	11.96	12.24	13.76
	12H	11.34	11.59	12.47	12.71	14.27	10.94	11.19	12.07	12.31	13.87
12H	4H	10.34	10.70	11.46	11.81	13.32	9.97	10.33	11.10	11.45	12.96
	6H	11.02	11.30	12.15	12.43	13.95	10.65	10.94	11.78	12.06	13.59
	8H	11.26	11.51	12.39	12.63	14.19	10.88	11.13	12.02	12.26	13.82