

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: P924881

Luminaire Tested: DFN2DIP-PN3F0-060D090US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924881
REPORT IS A COMBINATION OF REPORTS P901121 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-060D090US950-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

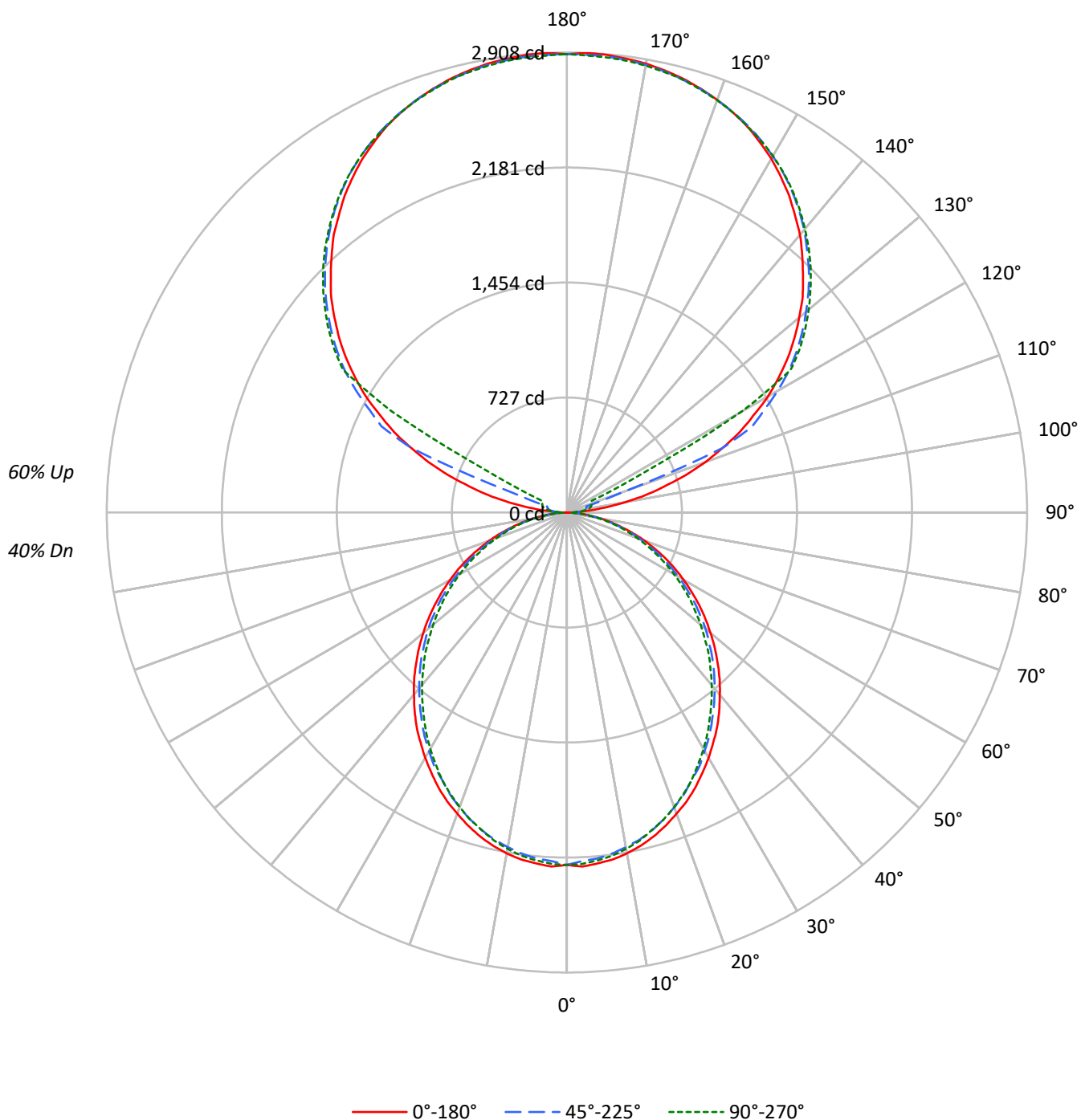
Lumens per Lamp: N/A
Luminaire Lumens: 14166.9 lumens
Efficiency: N/A
Efficacy: 110.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 128.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P924881

CATALOG NUMBER: DFN2DIP-PN3F0-060D090US950-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P924881

CATALOG NUMBER: DFN2DIP-PN3F0-060D090US950-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	50	30	10
RCR																				
0	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47	40	40	40
1	96	91	87	84	87	83	80	77	68	66	64	54	53	51	41	41	40	34	34	34
2	87	80	74	69	79	73	68	63	60	56	53	48	45	43	37	35	33	28	28	28
3	79	70	63	57	72	64	58	53	53	48	44	42	39	36	32	30	28	24	24	24
4	73	62	54	48	66	57	50	45	47	42	38	37	34	31	29	26	24	21	21	21
5	67	55	47	41	60	50	44	38	42	37	33	34	30	27	26	23	21	18	18	18
6	61	49	41	36	56	45	38	33	38	32	28	30	26	23	24	21	19	16	16	16
7	57	45	37	31	51	41	34	29	34	29	25	28	24	21	22	19	17	14	14	14
8	52	40	33	27	48	37	30	26	31	26	22	25	21	18	20	17	15	12	12	12
9	49	37	29	24	44	34	27	23	28	23	20	23	19	17	18	15	13	11	11	11
10	46	34	27	22	41	31	25	20	26	21	18	21	18	15	17	14	12	10	10	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2604	2604	2604
5°	2606	2565	2583
10°	2584	2529	2547
15°	2544	2486	2492
20°	2491	2426	2435
25°	2439	2355	2369
30°	2373	2289	2285
35°	2311	2211	2197
40°	2234	2132	2113
45°	2158	2053	2028
50°	2074	1970	1928
55°	1987	1874	1837
60°	1888	1761	1731
65°	1779	1643	1607
70°	1641	1499	1474
75°	1451	1326	1349
80°	1220	1106	1113
85°	860	731	726

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2158 cd/sqm

TEST NUMBER: P924881

CATALOG NUMBER: DFN2DIP-PN3F0-060D090US950-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	209.6	1.5
10°-20°	589.8	4.2
20°-30°	866.8	6.1
30°-40°	1006.7	7.1
40°-50°	1005.5	7.1
50°-60°	876.7	6.2
60°-70°	648.1	4.6
70°-80°	366.7	2.6
80°-90°	101.9	0.7
90°-100°	95.6	0.7
100°-110°	356.2	2.5
110°-120°	944.7	6.7
120°-130°	1566.8	11.1
130°-140°	1664.3	11.7
140°-150°	1546.8	10.9
150°-160°	1243.6	8.8
160°-170°	801.3	5.7
170°-180°	275.8	1.9
0°-30°	1666.2	11.8
0°-40°	2673.0	18.9
0°-60°	4555.2	32.2
0°-90°	5671.9	40.0
90°-120°	1396.4	9.9
90°-150°	6174.3	43.6
90°-180°	8495.0	60.0
0°-180°	14166.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2227	2227	2227	2227	2227	
5°	2227	2219	2195	2212	2208	211
15°	2120	2108	2080	2088	2078	597
25°	1919	1902	1866	1870	1866	883
35°	1656	1634	1600	1587	1576	1034
45°	1347	1332	1300	1276	1268	1040
55°	1020	1007	981	955	945	912
65°	688	675	653	634	623	680
75°	360	356	345	332	336	384
85°	88	86	84	77	75	98
90°	2	25	42	53	56	13
95°	136	67	82	92	90	161
105°	637	700	128	151	159	681
115°	1206	1241	1294	323	172	1187
125°	1704	1732	1772	1786	1793	1520
135°	2109	2143	2162	2183	2179	1629
145°	2447	2445	2480	2495	2485	1530
155°	2694	2676	2701	2713	2696	1242
165°	2839	2826	2833	2847	2833	802
175°	2904	2889	2894	2908	2887	276
180°	2898	2898	2898	2898	2898	

TEST NUMBER: P924881

CATALOG NUMBER: DFN2DIP-PN3F0-060D090US950-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2227.2	2227.2	2227.2	2227.2	2227.2
2.5°	2240.2	2229.5	2205.8	2227.2	2223.1
5°	2227.2	2218.8	2195.2	2212.2	2208.1
7.5°	2212.2	2199.5	2175.9	2193.2	2188.9
10°	2188.9	2173.9	2148.1	2165.2	2158.8
12.5°	2156.6	2143.8	2118.2	2128.9	2124.6
15°	2120.2	2107.5	2079.5	2088.2	2077.5
17.5°	2075.2	2062.5	2034.6	2045.2	2034.6
20°	2025.9	2013.2	1983.2	1989.6	1981.2
22.5°	1976.9	1957.5	1929.6	1929.6	1925.3
25°	1918.9	1901.9	1865.5	1869.6	1865.5
27.5°	1854.6	1839.6	1811.8	1805.5	1794.9
30°	1790.6	1773.2	1741.2	1734.8	1726.2
32.5°	1721.9	1709.2	1674.8	1661.9	1653.3
35°	1655.6	1634.2	1599.9	1586.9	1576.2
37.5°	1580.6	1561.2	1527.0	1511.9	1501.2
40°	1503.5	1486.2	1452.0	1432.9	1424.2
42.5°	1428.5	1411.3	1377.2	1355.6	1342.9
45°	1347.2	1332.2	1299.9	1276.5	1267.9
47.5°	1267.9	1252.9	1218.6	1195.0	1182.2
50°	1184.3	1173.6	1143.7	1113.6	1102.9
52.5°	1102.9	1087.9	1060.2	1036.6	1021.6
55°	1019.5	1006.6	980.9	955.2	944.6
57.5°	936.0	925.3	897.3	871.7	863.0
60°	852.3	843.9	814.0	790.3	783.9
62.5°	770.9	755.9	734.6	713.2	704.6
65°	687.5	674.7	653.3	633.9	623.2
67.5°	601.9	591.0	571.9	556.9	548.3
70°	522.6	514.0	494.6	479.7	471.3
72.5°	441.2	432.6	422.0	407.0	400.6
75°	359.7	355.7	344.7	332.0	336.3
77.5°	287.0	278.4	274.0	267.7	261.3
80°	214.3	212.0	207.7	201.3	197.0
82.5°	145.7	145.7	143.6	135.0	135.0
85°	87.7	85.7	83.6	77.0	75.0
87.5°	38.6	34.3	30.0	23.7	21.4
90°	2.0	25.2	41.8	52.6	56.5
92.5°	52.6	44.1	50.3	54.6	56.5
95°	136.2	67.0	81.7	92.3	90.2
97.5°	245.3	73.5	106.8	113.2	115.2
100°	371.2	84.0	119.5	136.2	140.4
102.5°	509.4	505.4	123.7	146.6	153.1
105°	637.4	700.4	127.9	150.9	159.3
107.5°	786.3	838.6	132.2	155.1	163.6
110°	928.9	972.8	367.0	157.3	165.6

TEST NUMBER: P924881

CATALOG NUMBER: DFN2DIP-PN3F0-060D090US950-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1063.1	1100.7	1065.1	161.3	167.8
115°	1205.6	1241.2	1293.7	322.9	172.0
117.5°	1329.3	1371.2	1407.0	1107.0	557.7
120°	1467.7	1499.1	1537.0	1562.1	1279.0
122.5°	1585.1	1618.7	1660.7	1673.1	1675.4
125°	1704.5	1731.9	1771.8	1786.5	1792.7
127.5°	1813.6	1842.9	1874.6	1895.5	1897.5
130°	1916.4	1950.1	1973.0	1996.1	1994.1
132.5°	2021.2	2048.6	2071.5	2090.5	2088.5
135°	2109.4	2143.0	2161.7	2182.8	2178.6
137.5°	2201.5	2226.6	2247.8	2268.7	2262.5
140°	2291.6	2308.6	2331.5	2350.4	2340.0
142.5°	2367.4	2382.0	2409.1	2425.8	2415.4
145°	2447.0	2444.7	2480.4	2495.1	2484.6
147.5°	2516.0	2509.8	2545.4	2555.9	2547.6
150°	2583.2	2568.5	2602.1	2614.5	2604.1
152.5°	2639.7	2623.0	2654.4	2667.1	2652.4
155°	2694.3	2675.6	2700.7	2713.2	2696.5
157.5°	2738.4	2721.7	2740.6	2755.2	2738.4
160°	2776.1	2763.5	2776.1	2788.6	2773.9
162.5°	2809.5	2797.0	2807.5	2822.2	2803.3
165°	2838.9	2826.4	2832.7	2847.4	2832.7
167.5°	2862.1	2849.4	2855.8	2870.5	2851.6
170°	2881.0	2868.3	2872.5	2887.2	2868.3
172.5°	2893.5	2881.0	2885.2	2899.9	2881.0
175°	2903.9	2889.2	2893.5	2908.1	2887.2
177.5°	2908.1	2893.5	2895.7	2910.4	2891.5
180°	2897.7	2897.7	2897.7	2897.7	2897.7



TEST NUMBER: P924881

CATALOG NUMBER: DFN2DIP-PN3F0-060D090US950-FLLONL

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	9.56	10.34	10.60	11.38	12.79	9.12	9.90	10.16	10.94	12.35
	3H	11.21	11.91	12.26	12.96	14.39	10.73	11.42	11.77	12.48	13.90
	4H	11.79	12.45	12.85	13.51	14.94	11.30	11.96	12.36	13.02	14.45
	6H	12.18	12.79	13.25	13.85	15.29	11.69	12.30	12.76	13.36	14.80
	8H	12.28	12.86	13.35	13.93	15.37	11.79	12.37	12.86	13.44	14.88
	12H	12.32	12.87	13.40	13.94	15.41	11.83	12.38	12.90	13.45	14.91
4H	2H	10.01	10.67	11.07	11.73	13.16	9.66	10.32	10.72	11.37	12.81
	3H	11.86	12.41	12.93	13.49	14.94	11.46	12.01	12.53	13.09	14.54
	4H	12.57	13.07	13.65	14.15	15.61	12.15	12.66	13.23	13.73	15.20
	6H	13.07	13.50	14.16	14.60	16.06	12.65	13.08	13.74	14.18	15.64
	8H	13.22	13.62	14.30	14.71	16.19	12.79	13.19	13.88	14.28	15.76
	12H	13.28	13.65	14.39	14.75	16.23	12.84	13.21	13.95	14.31	15.80
8H	4H	12.75	13.16	13.84	14.25	15.72	12.38	12.79	13.47	13.88	15.35
	6H	13.37	13.71	14.48	14.84	16.31	13.00	13.33	14.11	14.46	15.94
	8H	13.59	13.88	14.71	14.99	16.49	13.20	13.50	14.32	14.61	16.10
	12H	13.71	13.97	14.83	15.08	16.61	13.31	13.57	14.43	14.68	16.21
12H	4H	12.73	13.10	13.84	14.20	15.68	12.37	12.74	13.48	13.84	15.32
	6H	13.40	13.69	14.52	14.81	16.30	13.03	13.33	14.15	14.44	15.94
	8H	13.63	13.89	14.75	15.00	16.53	13.26	13.52	14.38	14.63	16.16