

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: P925031

Luminaire Tested: DFN2DIP-PN4F0-050D100US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925031
REPORT IS A COMBINATION OF REPORTS P901240 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-050D100US950-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

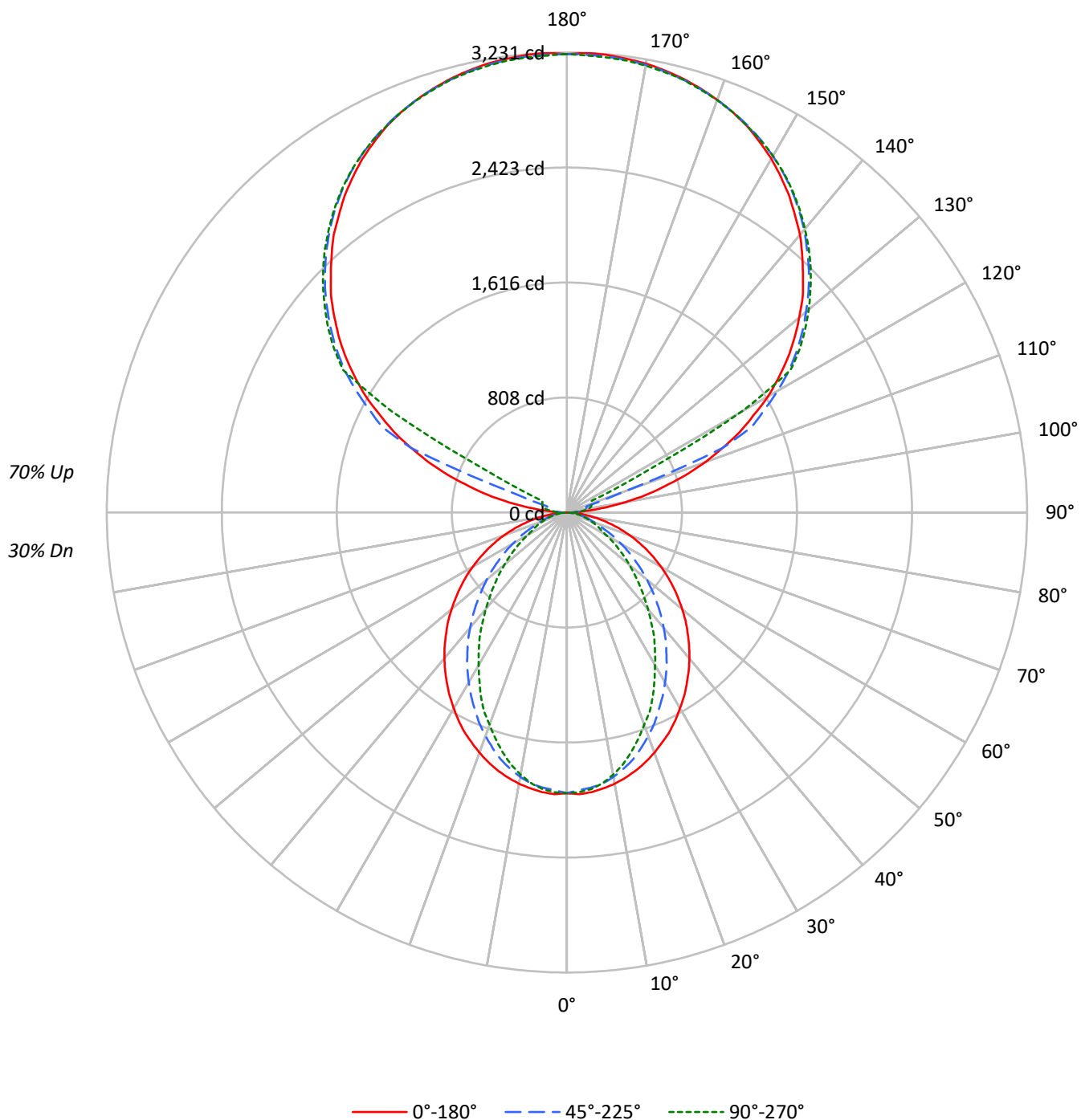
Lumens per Lamp: N/A
Luminaire Lumens: 13499.2 lumens
Efficiency: N/A
Efficacy: 113.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 119
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P925031

CATALOG NUMBER: DFN2DIP-PN4F0-050D100US950-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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38
1	94	90	86	83	84	81	77	75	64	62	60	48	47	46	34	33	32
2	85	78	73	68	76	71	66	62	56	53	50	43	40	39	30	29	28
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	25	24
4	71	61	54	48	64	55	49	44	44	40	36	34	31	28	24	22	21
5	66	55	47	41	59	49	43	38	40	35	31	30	27	25	22	20	18
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15
8	52	40	33	28	46	36	30	25	29	25	21	23	20	17	17	15	13
9	48	37	29	25	43	33	27	23	27	22	19	21	18	15	16	13	12
10	45	33	27	22	40	30	24	20	25	20	17	20	16	14	14	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1439	1439	1439
5°	1441	1416	1426
10°	1427	1389	1379
15°	1407	1343	1308
20°	1382	1280	1220
25°	1355	1209	1135
30°	1319	1137	1028
35°	1284	1059	933
40°	1248	978	825
45°	1207	888	726
50°	1164	798	630
55°	1120	701	538
60°	1068	600	443
65°	1008	497	399
70°	936	401	362
75°	846	354	330
80°	714	298	287
85°	498	200	218

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1717 cd/sqm

TEST NUMBER: P925031

CATALOG NUMBER: DFN2DIP-PN4F0-050D100US950-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.8	1.4
10°-20°	507.2	3.8
20°-30°	712.1	5.3
30°-40°	776.3	5.8
40°-50°	713.5	5.3
50°-60°	560.3	4.2
60°-70°	364.7	2.7
70°-80°	187.7	1.4
80°-90°	53.6	0.4
90°-100°	106.2	0.8
100°-110°	395.8	2.9
110°-120°	1049.6	7.8
120°-130°	1740.9	12.9
130°-140°	1849.2	13.7
140°-150°	1718.7	12.7
150°-160°	1381.8	10.2
160°-170°	890.4	6.6
170°-180°	306.5	2.3
0°-30°	1404.1	10.4
0°-40°	2180.4	16.2
0°-60°	3454.1	25.6
0°-90°	4060.2	30.1
90°-120°	1551.6	11.5
90°-150°	6860.4	50.8
90°-180°	9439.0	69.9
0°-180°	13499.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1971	1971	1971	1971	1971	
5°	1971	1963	1939	1955	1950	187
15°	1875	1855	1795	1761	1743	528
25°	1702	1645	1527	1454	1427	783
35°	1467	1376	1219	1106	1067	918
45°	1199	1079	892	765	722	926
55°	912	772	580	473	439	815
65°	616	471	310	250	244	610
75°	328	203	143	130	128	347
85°	77	39	34	34	34	88
90°	2	28	46	58	63	13
95°	151	74	91	103	100	179
105°	708	778	142	168	177	757
115°	1340	1379	1438	359	191	1319
125°	1894	1924	1969	1985	1992	1689
135°	2344	2381	2402	2425	2421	1810
145°	2719	2716	2756	2772	2761	1700
155°	2994	2973	3001	3015	2996	1380
165°	3154	3140	3147	3164	3147	891
175°	3226	3210	3215	3231	3208	307
180°	3220	3220	3220	3220	3220	

TEST NUMBER: P925031

CATALOG NUMBER: DFN2DIP-PN4F0-050D100US950-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1971.4	1971.4	1971.4	1971.4	1971.4
2.5°	1980.3	1971.4	1951.8	1969.7	1966.1
5°	1971.4	1962.6	1939.3	1955.3	1950.1
7.5°	1955.3	1944.7	1919.7	1926.8	1917.8
10°	1933.9	1921.5	1885.9	1880.4	1869.7
12.5°	1907.2	1891.2	1842.9	1832.3	1812.6
15°	1875.1	1855.4	1794.9	1761.0	1743.1
17.5°	1837.6	1809.1	1734.1	1694.9	1666.3
20°	1794.9	1759.1	1669.9	1625.4	1586.0
22.5°	1748.5	1707.4	1603.9	1543.3	1516.6
25°	1702.0	1644.9	1527.2	1454.1	1427.2
27.5°	1646.8	1586.0	1455.8	1371.9	1330.9
30°	1587.9	1520.0	1377.3	1286.4	1238.1
32.5°	1530.8	1448.6	1302.5	1195.4	1150.7
35°	1466.6	1375.6	1218.6	1106.2	1066.9
37.5°	1404.1	1305.9	1140.1	1016.9	972.4
40°	1338.1	1231.1	1057.9	931.3	884.9
42.5°	1270.3	1156.2	975.9	843.8	799.4
45°	1199.0	1079.4	892.1	765.3	722.5
47.5°	1131.2	1004.6	811.9	685.1	645.9
50°	1056.3	929.6	733.3	610.1	572.8
52.5°	983.0	849.2	658.4	540.6	506.8
55°	911.6	772.5	579.7	472.8	438.9
57.5°	838.6	695.8	510.3	410.4	381.8
60°	763.6	620.9	437.0	346.2	317.6
62.5°	690.5	547.8	374.6	289.1	274.8
65°	615.5	471.0	310.4	249.9	244.4
67.5°	544.2	399.6	249.9	219.4	214.1
70°	469.3	330.1	206.9	189.1	181.9
72.5°	397.9	265.8	173.1	158.8	155.2
75°	328.3	203.3	142.7	130.2	128.5
77.5°	258.7	144.4	112.5	105.2	101.6
80°	194.4	103.5	85.6	78.5	78.5
82.5°	135.6	69.6	58.9	55.2	55.2
85°	76.7	39.2	33.9	33.9	33.9
87.5°	28.6	14.2	14.2	12.5	12.5
90°	2.2	28.0	46.5	58.4	62.8
92.5°	58.4	48.9	55.9	60.6	62.8
95°	151.3	74.4	90.7	102.7	100.2
97.5°	272.5	81.6	118.7	125.8	128.1
100°	412.5	93.2	132.8	151.3	156.1
102.5°	566.0	561.6	137.5	162.9	170.1
105°	708.2	778.2	142.2	167.6	177.1
107.5°	873.7	931.8	146.9	172.4	181.7
110°	1032.1	1080.9	407.7	174.9	183.9

TEST NUMBER: P925031

CATALOG NUMBER: DFN2DIP-PN4F0-050D100US950-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1181.2	1223.0	1183.5	179.3	186.5
115°	1339.5	1379.1	1437.5	358.8	191.2
117.5°	1477.0	1523.5	1563.3	1230.0	619.7
120°	1630.9	1665.7	1707.8	1735.7	1421.2
122.5°	1761.2	1798.5	1845.2	1859.1	1861.5
125°	1894.0	1924.4	1968.7	1985.0	1991.9
127.5°	2015.1	2047.8	2082.9	2106.1	2108.3
130°	2129.3	2166.7	2192.2	2217.9	2215.7
132.5°	2245.8	2276.2	2301.7	2322.7	2320.5
135°	2343.8	2381.1	2401.9	2425.4	2420.7
137.5°	2446.2	2474.1	2497.6	2520.8	2513.9
140°	2546.2	2565.1	2590.5	2611.6	2599.9
142.5°	2630.4	2646.7	2676.8	2695.3	2683.8
145°	2718.9	2716.4	2756.0	2772.3	2760.7
147.5°	2795.5	2788.6	2828.1	2839.8	2830.7
150°	2870.2	2853.9	2891.3	2905.1	2893.5
152.5°	2933.0	2914.5	2949.4	2963.4	2947.1
155°	2993.7	2972.9	3000.8	3014.6	2996.1
157.5°	3042.6	3024.1	3045.1	3061.4	3042.6
160°	3084.7	3070.5	3084.7	3098.5	3082.2
162.5°	3121.7	3107.8	3119.5	3135.8	3114.8
165°	3154.3	3140.5	3147.4	3163.8	3147.4
167.5°	3180.1	3165.9	3173.2	3189.5	3168.4
170°	3201.1	3187.0	3191.7	3208.0	3187.0
172.5°	3214.9	3201.1	3205.8	3222.1	3201.1
175°	3226.5	3210.2	3214.9	3231.3	3208.0
177.5°	3231.3	3214.9	3217.5	3233.8	3212.7
180°	3219.7	3219.7	3219.7	3219.7	3219.7

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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	6.20	6.89	7.31	7.99	9.53	2.16	2.85	3.28	3.96	5.49
	3H	7.87	8.48	8.99	9.60	11.15	3.34	3.96	4.47	5.07	6.62
	4H	8.47	9.06	9.61	10.17	11.73	3.79	4.37	4.92	5.49	7.04
	6H	8.89	9.43	10.03	10.55	12.11	4.10	4.64	5.24	5.76	7.32
	8H	9.01	9.52	10.16	10.66	12.22	4.19	4.70	5.33	5.83	7.39
	12H	9.07	9.56	10.22	10.68	12.26	4.23	4.71	5.37	5.84	7.42
4H	2H	6.20	6.78	7.34	7.90	9.45	2.74	3.33	3.88	4.44	6.00
	3H	8.02	8.51	9.16	9.65	11.21	4.08	4.57	5.23	5.71	7.28
	4H	8.71	9.15	9.86	10.29	11.87	4.62	5.07	5.77	6.20	7.79
	6H	9.22	9.60	10.37	10.75	12.33	5.04	5.42	6.19	6.57	8.15
	8H	9.39	9.75	10.55	10.89	12.49	5.16	5.52	6.32	6.67	8.26
	12H	9.48	9.81	10.65	10.96	12.56	5.22	5.55	6.39	6.70	8.30
8H	4H	8.66	9.02	9.82	10.17	11.76	4.90	5.25	6.05	6.40	7.99
	6H	9.23	9.52	10.40	10.71	12.30	5.41	5.70	6.58	6.89	8.48
	8H	9.45	9.70	10.63	10.87	12.48	5.60	5.86	6.78	7.02	8.63
	12H	9.58	9.81	10.76	10.97	12.61	5.71	5.94	6.90	7.10	8.75
12H	4H	8.61	8.93	9.78	10.09	11.69	4.89	5.22	6.06	6.38	7.97
	6H	9.20	9.46	10.38	10.63	12.24	5.46	5.72	6.64	6.88	8.49
	8H	9.42	9.65	10.60	10.81	12.45	5.66	5.89	6.85	7.05	8.70

END OF REPORT