

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: P925235

Luminaire Tested: DFN2DIP-PN4F0-110D070US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925235
REPORT IS A COMBINATION OF REPORTS P901198 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-110D070US950-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

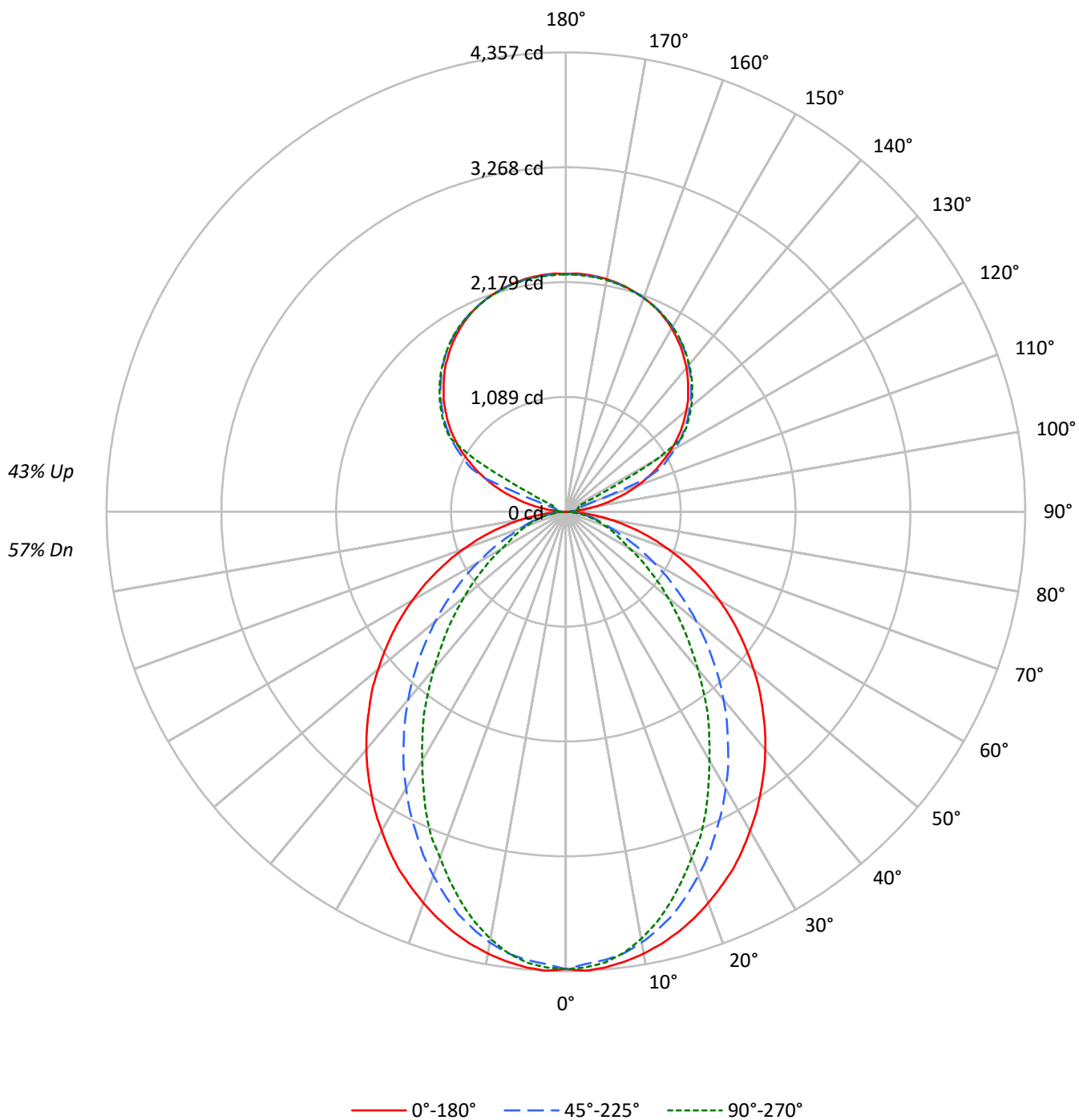
Lumens per Lamp: N/A
Luminaire Lumens: 15531.1 lumens
Efficiency: N/A
Efficacy: 93.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 166.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
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: P925235

CATALOG NUMBER: DFN2DIP-PN4F0-110D070US950-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P925235

CATALOG NUMBER: DFN2DIP-PN4F0-110D070US950-RLLONL

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
RCR																	
0	109	109	109	109	101	101	101	101	87	87	87		75	75	75		63
1	100	96	92	89	93	89	86	83	78	75	73		67	65	63		57
2	92	84	78	73	85	79	74	69	69	65	61		59	56	54		50
3	84	75	68	62	78	70	64	59	61	56	52		53	49	46		45
4	77	66	59	53	72	62	56	50	55	49	45		47	43	40		41
5	71	60	52	46	66	56	49	44	49	44	39		43	39	35		37
6	66	54	46	40	61	51	43	38	45	39	35		39	35	31		34
7	61	49	41	35	57	46	39	34	41	35	31		36	31	28		31
8	57	44	37	32	53	42	35	30	37	32	28		33	28	25		29
9	53	41	33	28	49	38	32	27	34	29	25		30	26	23		27
10	49	37	30	26	46	35	29	25	32	26	23		28	24	21		25

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3166	3166	3166
5°	3171	3116	3136
10°	3140	3055	3035
15°	3096	2955	2877
20°	3039	2816	2684
25°	2981	2660	2498
30°	2902	2501	2261
35°	2825	2329	2053
40°	2747	2151	1814
45°	2655	1954	1598
50°	2561	1755	1387
55°	2463	1542	1184
60°	2349	1320	975
65°	2218	1093	878
70°	2059	882	796
75°	1860	779	725
80°	1572	654	631
85°	1095	439	478

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2655 cd/sqm

TEST NUMBER: P925235

CATALOG NUMBER: DFN2DIP-PN4F0-110D070US950-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	406.5	2.6
10°-20°	1115.9	7.2
20°-30°	1566.7	10.1
30°-40°	1707.7	11.0
40°-50°	1569.6	10.1
50°-60°	1232.7	7.9
60°-70°	802.4	5.2
70°-80°	413.0	2.7
80°-90°	109.4	0.7
90°-100°	74.3	0.5
100°-110°	277.0	1.8
110°-120°	734.8	4.7
120°-130°	1218.6	7.8
130°-140°	1294.5	8.3
140°-150°	1203.1	7.7
150°-160°	967.2	6.2
160°-170°	623.3	4.0
170°-180°	214.5	1.4
0°-30°	3089.0	19.9
0°-40°	4796.8	30.9
0°-60°	7599.1	48.9
0°-90°	8923.9	57.5
90°-120°	1086.1	7.0
90°-150°	4802.2	30.9
90°-180°	6607.0	42.5
0°-180°	15531.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4337	4337	4337	4337	4337	
5°	4337	4318	4266	4302	4290	411
15°	4125	4082	3949	3874	3835	1162
25°	3744	3619	3360	3199	3140	1722
35°	3226	3026	2681	2434	2347	2019
45°	2638	2374	1963	1684	1590	2037
55°	2006	1700	1276	1040	966	1792
65°	1354	1036	683	550	538	1343
75°	722	447	314	286	283	764
85°	169	86	74	74	74	194
90°	2	20	32	41	44	15
95°	106	52	64	72	70	125
105°	496	545	100	117	124	530
115°	938	965	1006	251	134	923
125°	1326	1347	1378	1390	1394	1182
135°	1641	1667	1681	1698	1694	1267
145°	1903	1902	1929	1941	1932	1190
155°	2096	2081	2100	2110	2097	966
165°	2208	2198	2203	2215	2203	624
175°	2259	2247	2250	2262	2246	215
180°	2254	2254	2254	2254	2254	

TEST NUMBER: P925235

CATALOG NUMBER: DFN2DIP-PN4F0-110D070US950-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4337.2	4337.2	4337.2	4337.2	4337.2
2.5°	4356.7	4337.2	4293.9	4333.4	4325.5
5°	4337.2	4317.6	4266.4	4301.8	4290.1
7.5°	4301.8	4278.4	4223.5	4238.9	4219.3
10°	4254.7	4227.2	4148.9	4136.8	4113.6
12.5°	4196.0	4160.6	4054.4	4031.0	3987.7
15°	4125.2	4081.9	3948.6	3874.1	3834.9
17.5°	4042.8	3979.9	3815.0	3728.7	3665.8
20°	3948.6	3869.9	3673.8	3575.9	3489.3
22.5°	3846.6	3756.2	3528.5	3395.2	3336.4
25°	3744.5	3618.8	3359.8	3199.0	3139.9
27.5°	3623.0	3489.3	3202.8	3018.3	2927.9
30°	3493.5	3344.0	3030.0	2830.0	2723.9
32.5°	3367.7	3186.9	2865.4	2629.8	2531.5
35°	3226.5	3026.2	2681.0	2433.7	2347.0
37.5°	3089.1	2873.0	2508.2	2237.0	2139.2
40°	2943.8	2708.5	2327.5	2048.8	1946.8
42.5°	2794.6	2543.6	2147.2	1856.5	1758.6
45°	2637.7	2374.5	1962.7	1683.6	1589.6
47.5°	2488.6	2210.0	1786.1	1507.0	1420.9
50°	2323.7	2045.1	1613.3	1342.2	1260.1
52.5°	2162.5	1868.1	1448.4	1189.4	1114.7
55°	2005.5	1699.5	1275.5	1040.2	965.7
57.5°	1844.8	1530.8	1122.7	902.9	839.9
60°	1679.9	1365.9	961.5	761.7	698.8
62.5°	1519.1	1205.2	824.2	635.9	604.6
65°	1354.2	1036.0	683.0	549.7	537.6
67.5°	1197.3	879.1	549.7	482.6	471.0
70°	1032.3	726.3	455.2	416.0	400.2
72.5°	875.3	584.7	380.6	349.4	341.4
75°	722.1	447.2	314.0	286.5	282.8
77.5°	569.3	317.8	247.4	231.5	223.6
80°	427.7	227.8	188.2	172.9	172.9
82.5°	298.1	153.2	129.6	121.6	121.6
85°	168.7	86.2	74.5	74.5	74.5
87.5°	62.9	31.2	31.2	27.5	27.5
90°	1.5	19.6	32.5	40.8	44.0
92.5°	40.8	34.2	39.1	42.5	44.0
95°	105.9	52.1	63.5	71.8	70.1
97.5°	190.7	57.1	83.1	88.1	89.7
100°	288.8	65.3	92.9	105.9	109.2
102.5°	396.2	393.1	96.3	114.1	119.1
105°	495.8	544.7	99.5	117.3	123.9
107.5°	611.5	652.2	102.8	120.7	127.3
110°	722.6	756.6	285.4	122.4	128.8



TEST NUMBER: P925235

CATALOG NUMBER: DFN2DIP-PN4F0-110D070US950-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	826.9	856.1	828.5	125.5	130.5
115°	937.7	965.4	1006.2	251.2	133.8
117.5°	1033.9	1066.5	1094.3	861.0	433.8
120°	1141.6	1166.0	1195.5	1215.0	994.8
122.5°	1232.8	1258.9	1291.7	1301.4	1303.1
125°	1325.8	1347.0	1378.1	1389.5	1394.3
127.5°	1410.6	1433.4	1458.0	1474.3	1475.8
130°	1490.5	1516.7	1534.5	1552.5	1551.0
132.5°	1572.1	1593.4	1611.2	1625.9	1624.4
135°	1640.6	1666.7	1681.3	1697.7	1694.5
137.5°	1712.2	1731.9	1748.3	1764.6	1759.7
140°	1782.4	1795.5	1813.4	1828.1	1819.9
142.5°	1841.2	1852.7	1873.8	1886.7	1878.6
145°	1903.2	1901.5	1929.2	1940.6	1932.5
147.5°	1956.8	1952.1	1979.7	1987.8	1981.5
150°	2009.1	1997.8	2023.9	2033.5	2025.4
152.5°	2053.1	2040.1	2064.6	2074.4	2063.0
155°	2095.6	2081.0	2100.5	2110.2	2097.3
157.5°	2129.8	2116.8	2131.5	2143.0	2129.8
160°	2159.3	2149.4	2159.3	2168.9	2157.5
162.5°	2185.2	2175.5	2183.6	2195.1	2180.4
165°	2208.0	2198.4	2203.2	2214.6	2203.2
167.5°	2226.1	2216.1	2221.2	2232.6	2218.0
170°	2240.8	2230.9	2234.2	2245.6	2230.9
172.5°	2250.5	2240.8	2244.1	2255.4	2240.8
175°	2258.6	2247.1	2250.5	2261.8	2245.6
177.5°	2261.8	2250.5	2252.2	2263.7	2248.9
180°	2253.7	2253.7	2253.7	2253.7	2253.7

TEST NUMBER: P925235

CATALOG NUMBER: DFN2DIP-PN4F0-110D070US950-RLONL

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	11.83	12.72	12.73	13.63	14.80	7.79	8.69	8.69	9.60	10.76
	3H	13.51	14.31	14.42	15.23	16.42	8.99	9.79	9.90	10.71	11.90
	4H	14.13	14.88	15.05	15.81	17.01	9.44	10.20	10.37	11.12	12.32
	6H	14.55	15.25	15.49	16.18	17.39	9.77	10.46	10.70	11.39	12.61
	8H	14.68	15.35	15.63	16.30	17.50	9.86	10.52	10.80	11.47	12.68
	12H	14.75	15.38	15.70	16.32	17.56	9.90	10.53	10.85	11.48	12.71
4H	2H	11.85	12.61	12.78	13.54	14.73	8.40	9.15	9.33	10.08	11.28
	3H	13.69	14.32	14.63	15.28	16.49	9.75	10.38	10.70	11.34	12.55
	4H	14.39	14.96	15.34	15.91	17.15	10.31	10.88	11.26	11.83	13.07
	6H	14.91	15.40	15.87	16.38	17.62	10.73	11.22	11.69	12.20	13.44
	8H	15.09	15.55	16.05	16.52	17.77	10.86	11.32	11.83	12.29	13.54
	12H	15.19	15.60	16.17	16.59	17.85	10.93	11.34	11.91	12.33	13.59
8H	4H	14.36	14.82	15.33	15.79	17.04	10.59	11.05	11.56	12.02	13.27
	6H	14.93	15.31	15.92	16.32	17.57	11.11	11.49	12.11	12.51	13.76
	8H	15.15	15.49	16.15	16.49	17.76	11.31	11.64	12.31	12.64	13.91
	12H	15.30	15.59	16.30	16.58	17.90	11.43	11.72	12.43	12.72	14.03
12H	4H	14.32	14.73	15.30	15.72	16.97	10.60	11.01	11.58	12.00	13.26
	6H	14.91	15.24	15.91	16.24	17.51	11.16	11.50	12.16	12.50	13.77
	8H	15.13	15.43	16.14	16.42	17.74	11.38	11.67	12.38	12.67	13.98