

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: P925035

Luminaire Tested: DFN2DIP-PN4F0-050D110US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925035
REPORT IS A COMBINATION OF REPORTS P901258 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-050D110US950-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

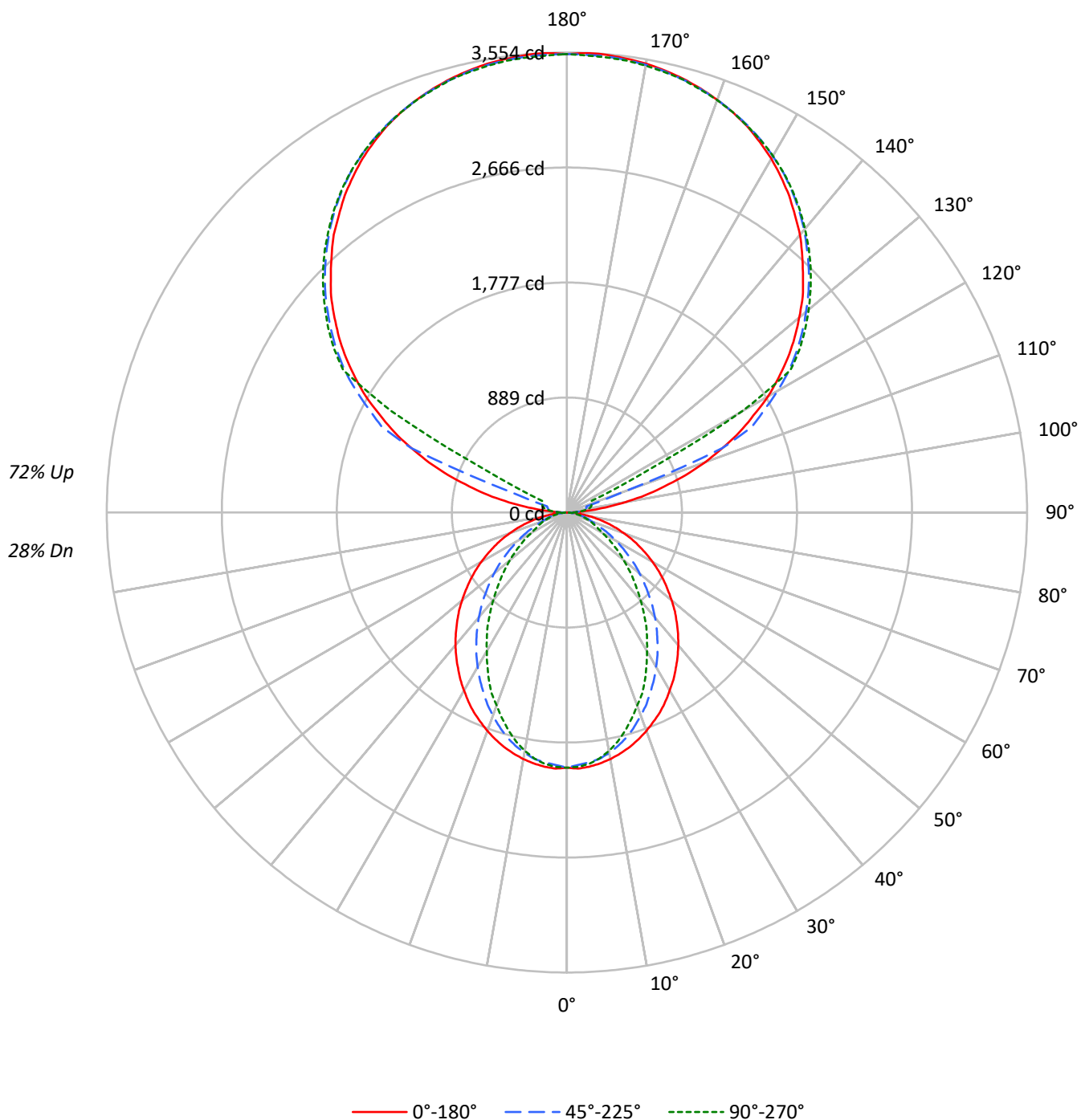
Lumens per Lamp: N/A
Luminaire Lumens: 14443.6 lumens
Efficiency: N/A
Efficacy: 106.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 135.7
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: P925035

CATALOG NUMBER: DFN2DIP-PN4F0-050D110US950-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		91	91	91	91		71	71	71		53	53	53		36	36	36
1	93	89	85	82		83	80	77	74		63	61	59		47	46	44		32	32	31
2	85	78	72	67		76	70	65	61		55	52	49		41	39	37		29	27	26
3	78	69	62	56		69	62	56	51		49	45	41		37	34	32		26	24	23
4	71	61	53	48		63	55	49	44		43	39	35		33	30	28		23	21	20
5	65	54	47	41		58	49	42	37		39	34	31		30	26	24		21	19	17
6	60	49	41	35		54	44	37	33		35	30	27		27	24	21		19	17	15
7	55	44	36	31		50	40	33	28		32	27	24		24	21	19		17	15	14
8	51	40	32	27		46	36	30	25		29	24	21		22	19	17		16	14	12
9	48	36	29	24		43	33	27	22		26	22	19		20	17	15		15	13	11
10	45	33	26	22		40	30	24	20		24	20	17		19	16	13		14	12	10

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: 1889 cd/sqm

TEST NUMBER: P925035

CATALOG NUMBER: DFN2DIP-PN4F0-050D110US950-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.8	1.3
10°-20°	507.2	3.5
20°-30°	712.1	4.9
30°-40°	776.3	5.4
40°-50°	713.5	4.9
50°-60°	560.3	3.9
60°-70°	364.7	2.5
70°-80°	187.7	1.3
80°-90°	54.2	0.4
90°-100°	116.8	0.8
100°-110°	435.4	3.0
110°-120°	1154.6	8.0
120°-130°	1915.0	13.3
130°-140°	2034.2	14.1
140°-150°	1890.5	13.1
150°-160°	1519.9	10.5
160°-170°	979.4	6.8
170°-180°	337.1	2.3
0°-30°	1404.1	9.7
0°-40°	2180.4	15.1
0°-60°	3454.1	23.9
0°-90°	4060.8	28.1
90°-120°	1706.7	11.8
90°-150°	7546.4	52.2
90°-180°	10383.0	71.9
0°-180°	14443.6	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	31	51	64	69	13
95°	166	82	100	113	110	197
105°	779	856	156	184	195	832
115°	1474	1517	1581	395	210	1451
125°	2083	2117	2166	2183	2191	1858
135°	2578	2619	2642	2668	2663	1992
145°	2991	2988	3032	3050	3037	1871
155°	3293	3270	3301	3316	3296	1517
165°	3470	3454	3462	3480	3462	980
175°	3549	3531	3536	3554	3529	338
180°	3542	3542	3542	3542	3542	

TEST NUMBER: P925035

CATALOG NUMBER: DFN2DIP-PN4F0-050D110US950-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°	2.5	30.7	51.1	64.2	69.1
92.5°	64.2	53.9	61.4	66.7	69.1
95°	166.5	81.9	99.8	112.9	110.2
97.5°	299.7	89.8	130.5	138.4	140.9
100°	453.7	102.6	146.1	166.5	171.6
102.5°	622.6	617.7	151.2	179.3	187.2
105°	779.0	856.0	156.5	184.4	194.8
107.5°	961.1	1024.9	161.6	189.6	200.0
110°	1135.4	1189.0	448.6	192.3	202.3

TEST NUMBER: P925035

CATALOG NUMBER: DFN2DIP-PN4F0-050D110US950-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1299.4	1345.3	1301.8	197.2	205.1
115°	1473.5	1517.0	1581.3	394.7	210.3
117.5°	1624.8	1675.9	1719.7	1353.0	681.6
120°	1793.9	1832.3	1878.5	1909.2	1563.2
122.5°	1937.3	1978.3	2029.7	2045.0	2047.8
125°	2083.3	2116.8	2165.5	2183.4	2191.1
127.5°	2216.6	2252.5	2291.1	2316.7	2319.2
130°	2342.3	2383.4	2411.3	2439.7	2437.3
132.5°	2470.4	2503.9	2531.9	2555.0	2552.6
135°	2578.2	2619.2	2642.0	2668.0	2662.7
137.5°	2690.8	2721.5	2747.3	2772.9	2765.3
140°	2800.9	2821.6	2849.6	2872.7	2859.9
142.5°	2893.4	2911.3	2944.5	2964.9	2952.2
145°	2990.8	2988.0	3031.5	3049.6	3036.8
147.5°	3075.1	3067.5	3111.0	3123.8	3113.8
150°	3157.3	3139.3	3180.3	3195.6	3182.8
152.5°	3226.3	3205.9	3244.3	3259.8	3241.9
155°	3293.0	3270.1	3300.8	3316.1	3295.7
157.5°	3346.8	3326.4	3349.6	3367.5	3346.8
160°	3393.1	3377.5	3393.1	3408.3	3390.3
162.5°	3433.8	3418.7	3431.4	3449.4	3426.3
165°	3469.8	3454.5	3462.2	3480.1	3462.2
167.5°	3498.0	3482.6	3490.5	3508.4	3485.3
170°	3521.2	3505.7	3510.8	3528.8	3505.7
172.5°	3536.4	3521.2	3526.4	3544.3	3521.2
175°	3549.2	3531.2	3536.4	3554.4	3528.8
177.5°	3554.4	3536.4	3539.1	3557.1	3534.0
180°	3541.6	3541.6	3541.6	3541.6	3541.6

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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	5.92	6.60	7.05	7.72	9.27	1.89	2.57	3.02	3.68	5.24
	3H	7.59	8.20	8.73	9.32	10.89	3.06	3.67	4.20	4.80	6.37
	4H	8.19	8.77	9.34	9.90	11.47	3.51	4.08	4.65	5.21	6.79
	6H	8.61	9.14	9.76	10.27	11.86	3.82	4.35	4.98	5.48	7.07
	8H	8.73	9.24	9.89	10.38	11.96	3.91	4.41	5.06	5.56	7.13
	12H	8.79	9.27	9.95	10.41	12.01	3.95	4.42	5.11	5.56	7.16
4H	2H	5.92	6.50	7.07	7.62	9.20	2.46	3.04	3.62	4.17	5.74
	3H	7.74	8.22	8.90	9.37	10.96	3.80	4.28	4.96	5.43	7.02
	4H	8.43	8.87	9.59	10.01	11.62	4.34	4.78	5.51	5.93	7.53
	6H	8.94	9.31	10.10	10.48	12.08	4.76	5.13	5.92	6.30	7.89
	8H	9.11	9.46	10.28	10.62	12.23	4.88	5.23	6.05	6.39	8.00
	12H	9.20	9.52	10.38	10.69	12.31	4.94	5.26	6.12	6.43	8.04
8H	4H	8.38	8.74	9.55	9.89	11.51	4.61	4.97	5.78	6.12	7.74
	6H	8.95	9.24	10.13	10.44	12.05	5.13	5.42	6.31	6.62	8.23
	8H	9.17	9.42	10.36	10.59	12.23	5.32	5.57	6.51	6.75	8.38
	12H	9.30	9.52	10.49	10.70	12.36	5.43	5.65	6.63	6.83	8.49
12H	4H	8.33	8.65	9.51	9.82	11.43	4.61	4.93	5.79	6.10	7.72
	6H	8.92	9.18	10.11	10.35	11.98	5.18	5.43	6.37	6.61	8.24
	8H	9.14	9.36	10.33	10.53	12.20	5.38	5.60	6.58	6.78	8.44

END OF REPORT