

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: P919397

Luminaire Tested: DFN2DIP-PN3F0-050D090US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919397
REPORT IS A COMBINATION OF REPORTS P901119 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-050D090US935-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

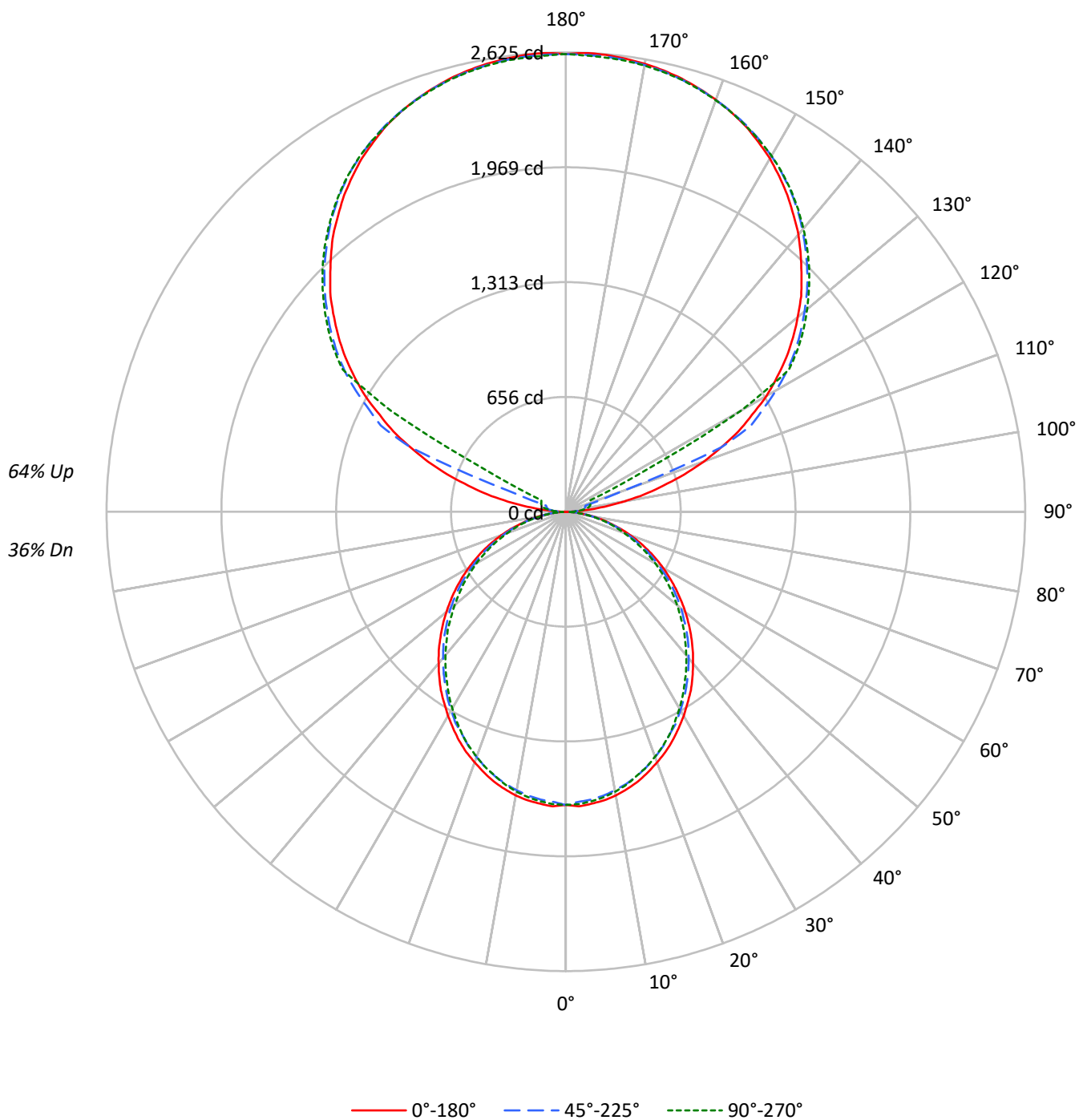
Lumens per Lamp: N/A
Luminaire Lumens: 11933.4 lumens
Efficiency: N/A
Efficacy: 102.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 116.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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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	104	104	104	104	94	94	94	94	75	75	75	59	59	59	43	43	43
1	95	90	87	83	85	82	79	76	66	64	62	51	50	49	38	37	36
2	86	79	73	68	78	72	66	62	58	54	51	45	43	41	33	32	31
3	79	69	62	56	71	63	57	52	51	47	43	40	37	34	30	28	26
4	72	61	54	48	65	56	49	44	45	40	37	36	32	29	26	24	22
5	66	54	47	41	59	50	43	38	40	35	31	32	28	25	24	21	19
6	61	49	41	35	55	44	38	33	36	31	27	29	25	22	22	19	17
7	56	44	36	31	50	40	33	28	33	28	24	26	22	20	20	17	15
8	52	40	32	27	47	36	30	25	30	25	21	24	20	17	18	16	14
9	48	36	29	24	44	33	27	22	27	22	19	22	18	16	17	14	12
10	45	33	26	21	41	30	24	20	25	20	17	20	17	14	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1958	1958	1958
5°	1960	1929	1943
10°	1943	1902	1916
15°	1913	1869	1874
20°	1874	1825	1831
25°	1834	1771	1782
30°	1785	1721	1719
35°	1738	1663	1653
40°	1680	1604	1590
45°	1623	1544	1525
50°	1560	1482	1450
55°	1494	1410	1381
60°	1420	1324	1302
65°	1338	1235	1209
70°	1234	1127	1109
75°	1091	997	1015
80°	918	832	837
85°	647	550	546

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1764 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.7	1.3
10°-20°	443.6	3.7
20°-30°	651.9	5.5
30°-40°	757.2	6.3
40°-50°	756.2	6.3
50°-60°	659.4	5.5
60°-70°	487.4	4.1
70°-80°	275.8	2.3
80°-90°	77.4	0.6
90°-100°	86.2	0.7
100°-110°	321.5	2.7
110°-120°	852.6	7.1
120°-130°	1414.1	11.8
130°-140°	1502.1	12.6
140°-150°	1396.0	11.7
150°-160°	1122.4	9.4
160°-170°	723.2	6.1
170°-180°	248.9	2.1
0°-30°	1253.2	10.5
0°-40°	2010.3	16.8
0°-60°	3425.9	28.7
0°-90°	4266.5	35.8
90°-120°	1260.3	10.6
90°-150°	5572.4	46.7
90°-180°	7667.0	64.2
0°-180°	11933.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1675	1675	1675	1675	1675	
5°	1675	1669	1651	1664	1661	159
15°	1595	1585	1564	1570	1562	449
25°	1443	1430	1403	1406	1403	664
35°	1245	1229	1203	1194	1186	778
45°	1013	1002	978	960	954	782
55°	767	757	738	718	710	686
65°	517	507	491	477	469	511
75°	270	267	259	250	253	289
85°	66	64	63	58	56	74
90°	2	23	38	47	51	11
95°	123	60	74	83	81	146
105°	575	632	116	136	144	615
115°	1088	1120	1168	291	155	1071
125°	1538	1563	1599	1612	1618	1372
135°	1904	1934	1951	1970	1966	1471
145°	2208	2206	2239	2252	2242	1381
155°	2432	2415	2437	2449	2434	1121
165°	2562	2551	2557	2570	2557	724
175°	2621	2608	2611	2625	2606	249
180°	2615	2615	2615	2615	2615	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1675.1	1675.1	1675.1	1675.1	1675.1
2.5°	1684.8	1676.8	1659.1	1675.1	1672.1
5°	1675.1	1668.8	1651.0	1663.8	1660.8
7.5°	1663.8	1654.2	1636.5	1649.5	1646.2
10°	1646.2	1634.9	1615.7	1628.4	1623.7
12.5°	1621.9	1612.4	1593.1	1601.1	1597.8
15°	1594.6	1585.0	1564.0	1570.5	1562.5
17.5°	1560.7	1551.2	1530.2	1538.2	1530.2
20°	1523.7	1514.2	1491.6	1496.3	1490.0
22.5°	1486.8	1472.2	1451.2	1451.2	1447.9
25°	1443.2	1430.4	1403.0	1406.1	1403.0
27.5°	1394.8	1383.5	1362.7	1357.9	1349.9
30°	1346.6	1333.7	1309.6	1304.8	1298.3
32.5°	1295.0	1285.5	1259.6	1249.9	1243.5
35°	1245.1	1229.1	1203.2	1193.5	1185.5
37.5°	1188.7	1174.2	1148.4	1137.1	1129.1
40°	1130.8	1117.8	1092.0	1077.6	1071.2
42.5°	1074.4	1061.4	1035.8	1019.5	1010.0
45°	1013.2	1001.9	977.7	960.1	953.6
47.5°	953.6	942.3	916.5	898.7	889.2
50°	890.7	882.7	860.1	837.6	829.5
52.5°	829.5	818.2	797.4	779.6	768.4
55°	766.8	757.1	737.7	718.4	710.4
57.5°	703.9	695.9	674.9	655.6	649.0
60°	641.0	634.7	612.2	594.3	589.6
62.5°	579.9	568.6	552.5	536.4	529.9
65°	517.1	507.4	491.3	476.8	468.7
67.5°	452.7	444.5	430.2	418.9	412.3
70°	393.0	386.6	372.0	360.8	354.5
72.5°	331.9	325.4	317.4	306.1	301.3
75°	270.5	267.4	259.2	249.7	253.0
77.5°	215.9	209.3	206.1	201.3	196.6
80°	161.2	159.5	156.2	151.4	148.2
82.5°	109.5	109.5	108.0	101.5	101.5
85°	66.0	64.4	62.9	57.9	56.4
87.5°	29.0	25.8	22.6	17.7	16.1
90°	1.8	22.7	37.7	47.4	51.0
92.5°	47.4	39.8	45.4	49.2	51.0
95°	123.0	60.4	73.7	83.3	81.4
97.5°	221.4	66.3	96.4	102.2	104.0
100°	335.0	75.8	107.9	123.0	126.7
102.5°	459.8	456.2	111.7	132.3	138.2
105°	575.2	632.1	115.5	136.2	143.8
107.5°	709.6	756.8	119.3	140.0	147.7
110°	838.4	878.0	331.2	142.0	149.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	959.5	993.4	961.3	145.6	151.4
115°	1088.0	1120.2	1167.6	291.4	155.2
117.5°	1199.7	1237.5	1269.8	999.1	503.3
120°	1324.6	1353.0	1387.2	1409.8	1154.3
122.5°	1430.5	1460.9	1498.8	1510.0	1512.1
125°	1538.3	1563.1	1599.0	1612.3	1617.9
127.5°	1636.8	1663.3	1691.9	1710.7	1712.5
130°	1729.6	1760.0	1780.6	1801.5	1799.7
132.5°	1824.2	1848.9	1869.6	1886.7	1884.9
135°	1903.8	1934.1	1950.9	1970.0	1966.3
137.5°	1986.9	2009.6	2028.7	2047.5	2041.9
140°	2068.2	2083.5	2104.2	2121.2	2111.9
142.5°	2136.6	2149.8	2174.3	2189.3	2180.0
145°	2208.5	2206.4	2238.6	2251.9	2242.4
147.5°	2270.7	2265.1	2297.2	2306.7	2299.2
150°	2331.4	2318.2	2348.5	2359.7	2350.3
152.5°	2382.4	2367.3	2395.6	2407.1	2393.8
155°	2431.6	2414.8	2437.4	2448.7	2433.6
157.5°	2471.4	2456.3	2473.4	2486.6	2471.4
160°	2505.5	2494.1	2505.5	2516.8	2503.5
162.5°	2535.6	2524.4	2533.8	2547.1	2530.0
165°	2562.2	2550.9	2556.6	2569.8	2556.6
167.5°	2583.1	2571.6	2577.4	2590.7	2573.6
170°	2600.1	2588.7	2592.5	2605.7	2588.7
172.5°	2611.4	2600.1	2603.9	2617.2	2600.1
175°	2620.8	2607.5	2611.4	2624.6	2605.7
177.5°	2624.6	2611.4	2613.4	2626.6	2609.6
180°	2615.2	2615.2	2615.2	2615.2	2615.2

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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	8.08	8.83	9.16	9.90	11.36	7.65	8.39	8.72	9.46	10.93
	3H	9.73	10.40	10.81	11.48	12.96	9.25	9.92	10.33	11.00	12.48
	4H	10.31	10.94	11.40	12.03	13.51	9.82	10.46	10.91	11.54	13.03
	6H	10.70	11.28	11.80	12.37	13.86	10.21	10.79	11.31	11.88	13.38
	8H	10.80	11.35	11.90	12.45	13.95	10.31	10.86	11.41	11.96	13.46
	12H	10.84	11.37	11.95	12.46	13.98	10.34	10.87	11.45	11.97	13.48
4H	2H	8.53	9.16	9.63	10.25	11.73	8.18	8.81	9.28	9.89	11.38
	3H	10.38	10.91	11.48	12.02	13.51	9.98	10.50	11.08	11.61	13.11
	4H	11.08	11.57	12.19	12.67	14.19	10.67	11.15	11.77	12.25	13.77
	6H	11.58	12.00	12.70	13.12	14.63	11.16	11.58	12.28	12.70	14.21
	8H	11.73	12.12	12.84	13.23	14.76	11.30	11.69	12.42	12.81	14.33
	12H	11.79	12.15	12.93	13.27	14.80	11.36	11.71	12.49	12.83	14.37
8H	4H	11.26	11.65	12.38	12.77	14.30	10.89	11.28	12.01	12.40	13.93
	6H	11.88	12.21	13.02	13.36	14.89	11.51	11.83	12.65	12.99	14.51
	8H	12.10	12.38	13.24	13.52	15.06	11.72	12.00	12.86	13.13	14.68
	12H	12.22	12.47	13.37	13.60	15.18	11.82	12.07	12.97	13.20	14.78
12H	4H	11.24	11.60	12.38	12.72	14.26	10.88	11.23	12.02	12.36	13.89
	6H	11.91	12.19	13.05	13.33	14.87	11.55	11.83	12.69	12.97	14.51
	8H	12.14	12.39	13.29	13.52	15.10	11.77	12.02	12.92	13.15	14.73