

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: P913971

Luminaire Tested: DFN2DIP-PN3F0-060D090US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913971
REPORT IS A COMBINATION OF REPORTS P901122 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-060D090US927-RLONL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

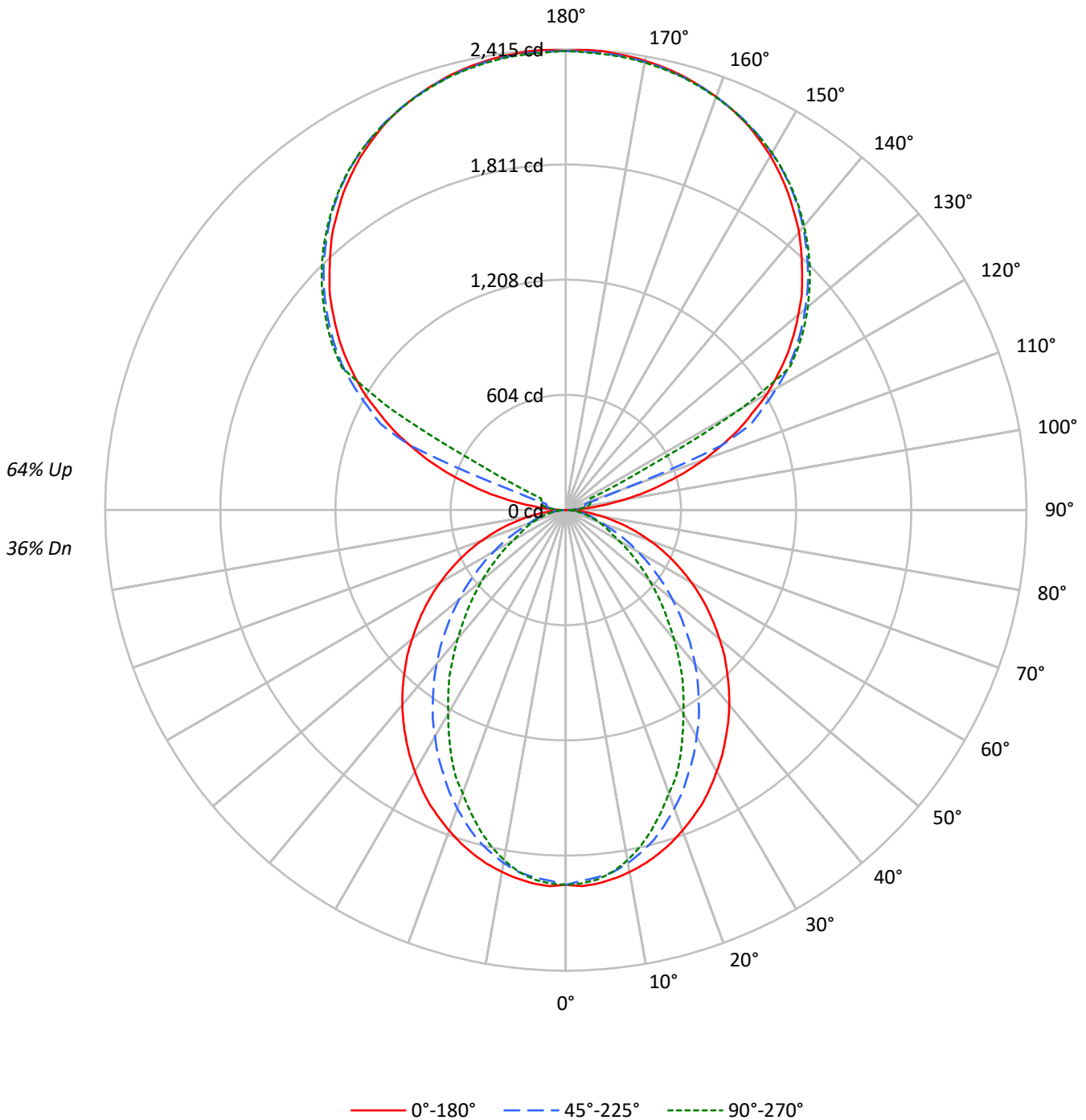
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11098.4 lumens
Efficiency: N/A
Efficacy: 86.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Indirect

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

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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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	104	104	104	104	94	94	94	94	76	76	76	59	59	59	44	44	44	36			36
1	95	91	87	84	86	83	80	77	67	65	63	52	51	50	39	38	38	31			31
2	87	80	74	69	78	73	68	63	59	56	53	46	44	42	35	33	32	27			27
3	79	70	63	58	72	64	58	53	52	48	45	41	38	36	31	29	28	23			23
4	73	63	55	49	66	57	51	46	47	42	38	37	34	31	28	26	24	20			20
5	67	56	48	42	60	51	44	39	42	37	33	33	30	27	25	23	21	18			18
6	62	50	42	37	56	46	39	34	38	33	29	30	27	24	23	21	19	16			16
7	57	45	38	32	52	41	35	30	34	29	26	28	24	21	21	19	17	14			14
8	53	41	34	29	48	38	31	27	31	26	23	25	22	19	20	17	15	13			13
9	49	37	30	25	45	34	28	24	29	24	20	23	20	17	18	16	14	12			12
10	46	34	27	23	42	32	25	21	26	22	18	22	18	15	17	14	13	11			11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2296	2296	2296
5°	2299	2258	2273
10°	2275	2212	2198
15°	2242	2138	2083
20°	2199	2035	1942
25°	2155	1921	1806
30°	2097	1804	1633
35°	2040	1678	1482
40°	1981	1548	1309
45°	1914	1404	1151
50°	1843	1259	998
55°	1770	1104	850
60°	1685	942	699
65°	1587	778	628
70°	1468	624	567
75°	1319	547	514
80°	1103	454	442
85°	749	295	326

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1914 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.1	1.7
10°-20°	505.4	4.6
20°-30°	709.6	6.4
30°-40°	773.5	7.0
40°-50°	710.9	6.4
50°-60°	558.3	5.0
60°-70°	363.4	3.3
70°-80°	187.1	1.7
80°-90°	52.0	0.5
90°-100°	79.3	0.7
100°-110°	295.8	2.7
110°-120°	784.4	7.1
120°-130°	1301.0	11.7
130°-140°	1382.0	12.5
140°-150°	1284.4	11.6
150°-160°	1032.6	9.3
160°-170°	665.4	6.0
170°-180°	229.0	2.1
0°-30°	1399.1	12.6
0°-40°	2172.6	19.6
0°-60°	3441.9	31.0
0°-90°	4044.4	36.4
90°-120°	1159.5	10.4
90°-150°	5127.0	46.2
90°-180°	7054.0	63.6
0°-180°	11098.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1964	1964	1964	1964	1964	
5°	1964	1956	1932	1948	1943	186
15°	1868	1849	1788	1755	1737	527
25°	1696	1639	1522	1449	1422	780
35°	1461	1371	1214	1102	1063	915
45°	1195	1076	889	763	720	923
55°	908	770	578	471	437	812
65°	613	469	309	249	244	608
75°	327	203	142	130	128	346
85°	76	39	34	34	34	88
90°	2	21	35	44	47	10
95°	113	56	68	77	75	134
105°	529	582	106	125	132	566
115°	1001	1031	1074	268	143	986
125°	1415	1438	1471	1483	1489	1262
135°	1752	1780	1795	1813	1809	1353
145°	2032	2030	2060	2072	2063	1271
155°	2237	2222	2243	2253	2239	1031
165°	2357	2347	2352	2364	2352	666
175°	2411	2399	2403	2415	2398	229
180°	2406	2406	2406	2406	2406	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1964.5	1964.5	1964.5	1964.5	1964.5
2.5°	1973.3	1964.5	1944.8	1962.7	1959.1
5°	1964.5	1955.6	1932.4	1948.4	1943.1
7.5°	1948.4	1937.8	1913.0	1919.9	1911.1
10°	1927.1	1914.6	1879.2	1873.7	1863.1
12.5°	1900.5	1884.4	1836.4	1825.8	1806.2
15°	1868.4	1848.8	1788.4	1754.7	1736.9
17.5°	1831.1	1802.6	1727.9	1688.9	1660.4
20°	1788.4	1752.8	1664.0	1619.6	1580.4
22.5°	1742.2	1701.3	1598.1	1537.8	1511.2
25°	1696.1	1639.1	1521.8	1449.0	1422.2
27.5°	1641.0	1580.4	1450.6	1367.1	1326.2
30°	1582.3	1514.6	1372.4	1281.8	1233.7
32.5°	1525.3	1443.5	1297.9	1191.1	1146.6
35°	1461.4	1370.7	1214.3	1102.2	1063.0
37.5°	1399.2	1301.2	1136.1	1013.3	968.9
40°	1333.3	1226.8	1054.2	928.0	881.8
42.5°	1265.8	1152.1	972.5	840.8	796.5
45°	1194.7	1075.5	889.0	762.6	719.9
47.5°	1127.2	1001.0	809.0	682.6	643.6
50°	1052.5	926.3	730.7	607.9	570.8
52.5°	979.5	846.1	656.0	538.7	504.9
55°	908.4	769.8	577.7	471.2	437.4
57.5°	835.6	693.3	508.5	408.9	380.4
60°	760.9	618.7	435.5	345.0	316.5
62.5°	688.1	545.9	373.3	288.0	273.9
65°	613.4	469.3	309.3	249.0	243.5
67.5°	542.2	398.2	249.0	218.6	213.3
70°	467.5	328.9	206.1	188.5	181.3
72.5°	396.5	264.8	172.4	158.3	154.6
75°	327.1	202.6	142.2	129.8	128.1
77.5°	257.9	143.9	112.0	104.9	101.3
80°	193.7	103.1	85.2	78.3	78.3
82.5°	135.1	69.4	58.6	55.1	55.1
85°	76.4	39.1	33.7	33.7	33.7
87.5°	28.5	14.2	14.2	12.4	12.4
90°	1.7	20.9	34.7	43.6	46.9
92.5°	43.6	36.6	41.7	45.3	46.9
95°	113.1	55.6	67.8	76.7	74.9
97.5°	203.7	61.0	88.7	94.0	95.7
100°	308.2	69.7	99.3	113.1	116.6
102.5°	423.0	419.7	102.7	121.8	127.1
105°	529.3	581.6	106.2	125.3	132.3
107.5°	652.9	696.3	109.8	128.8	135.9
110°	771.3	807.8	304.8	130.6	137.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	882.8	914.0	884.5	134.0	139.3
115°	1001.1	1030.6	1074.3	268.2	142.8
117.5°	1103.8	1138.6	1168.3	919.2	463.1
120°	1218.8	1244.8	1276.3	1297.1	1062.1
122.5°	1316.2	1344.1	1379.0	1389.3	1391.2
125°	1415.4	1438.1	1471.2	1483.4	1488.6
127.5°	1505.9	1530.3	1556.6	1574.0	1575.6
130°	1591.3	1619.3	1638.3	1657.5	1655.9
132.5°	1678.4	1701.1	1720.1	1735.9	1734.2
135°	1751.6	1779.5	1795.0	1812.6	1809.1
137.5°	1828.1	1849.0	1866.5	1883.9	1878.7
140°	1902.9	1917.0	1936.0	1951.7	1943.1
142.5°	1965.8	1978.0	2000.5	2014.4	2005.7
145°	2031.9	2030.0	2059.7	2071.9	2063.2
147.5°	2089.2	2084.1	2113.6	2122.3	2115.4
150°	2145.1	2132.9	2160.8	2171.1	2162.4
152.5°	2192.0	2178.1	2204.2	2214.7	2202.5
155°	2237.3	2221.8	2242.6	2253.0	2239.1
157.5°	2273.9	2260.0	2275.7	2287.9	2273.9
160°	2305.2	2294.7	2305.2	2315.6	2303.4
162.5°	2333.0	2322.6	2331.3	2343.5	2327.8
165°	2357.4	2347.0	2352.2	2364.4	2352.2
167.5°	2376.6	2366.1	2371.4	2383.6	2367.9
170°	2392.3	2381.8	2385.3	2397.5	2381.8
172.5°	2402.7	2392.3	2395.8	2408.0	2392.3
175°	2411.3	2399.1	2402.7	2414.8	2397.5
177.5°	2414.8	2402.7	2404.5	2416.7	2401.0
180°	2406.2	2406.2	2406.2	2406.2	2406.2



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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	8.58	9.31	9.65	10.38	11.84	4.55	5.28	5.62	6.35	7.80
	3H	10.25	10.90	11.33	11.98	13.45	5.72	6.38	6.80	7.45	8.93
	4H	10.85	11.46	11.94	12.54	14.02	6.16	6.78	7.26	7.86	9.34
	6H	11.26	11.83	12.36	12.91	14.40	6.48	7.04	7.58	8.13	9.62
	8H	11.38	11.92	12.48	13.02	14.50	6.56	7.10	7.66	8.20	9.68
	12H	11.43	11.95	12.54	13.04	14.55	6.60	7.11	7.71	8.20	9.71
4H	2H	8.59	9.20	9.68	10.28	11.76	5.13	5.75	6.23	6.83	8.30
	3H	10.40	10.91	11.50	12.02	13.51	6.46	6.98	7.57	8.08	9.57
	4H	11.08	11.55	12.19	12.65	14.16	7.00	7.47	8.11	8.57	10.08
	6H	11.59	11.99	12.70	13.11	14.62	7.41	7.81	8.52	8.93	10.44
	8H	11.76	12.13	12.87	13.24	14.77	7.53	7.91	8.65	9.02	10.54
	12H	11.84	12.18	12.98	13.31	14.83	7.59	7.93	8.72	9.05	10.58
8H	4H	11.04	11.42	12.16	12.53	14.05	7.27	7.65	8.39	8.76	10.28
	6H	11.60	11.91	12.73	13.06	14.58	7.78	8.09	8.91	9.24	10.76
	8H	11.81	12.08	12.95	13.22	14.75	7.96	8.23	9.11	9.37	10.91
	12H	11.94	12.18	13.09	13.31	14.88	8.07	8.31	9.22	9.44	11.02
12H	4H	10.99	11.33	12.12	12.45	13.98	7.27	7.61	8.40	8.73	10.26
	6H	11.57	11.84	12.71	12.98	14.52	7.82	8.10	8.97	9.23	10.77
	8H	11.78	12.02	12.93	13.15	14.73	8.02	8.26	9.17	9.39	10.97