

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: P914159

Luminaire Tested: DFN2DIP-PN4F0-060D110US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914159
REPORT IS A COMBINATION OF REPORTS P901260 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-060D110US927-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

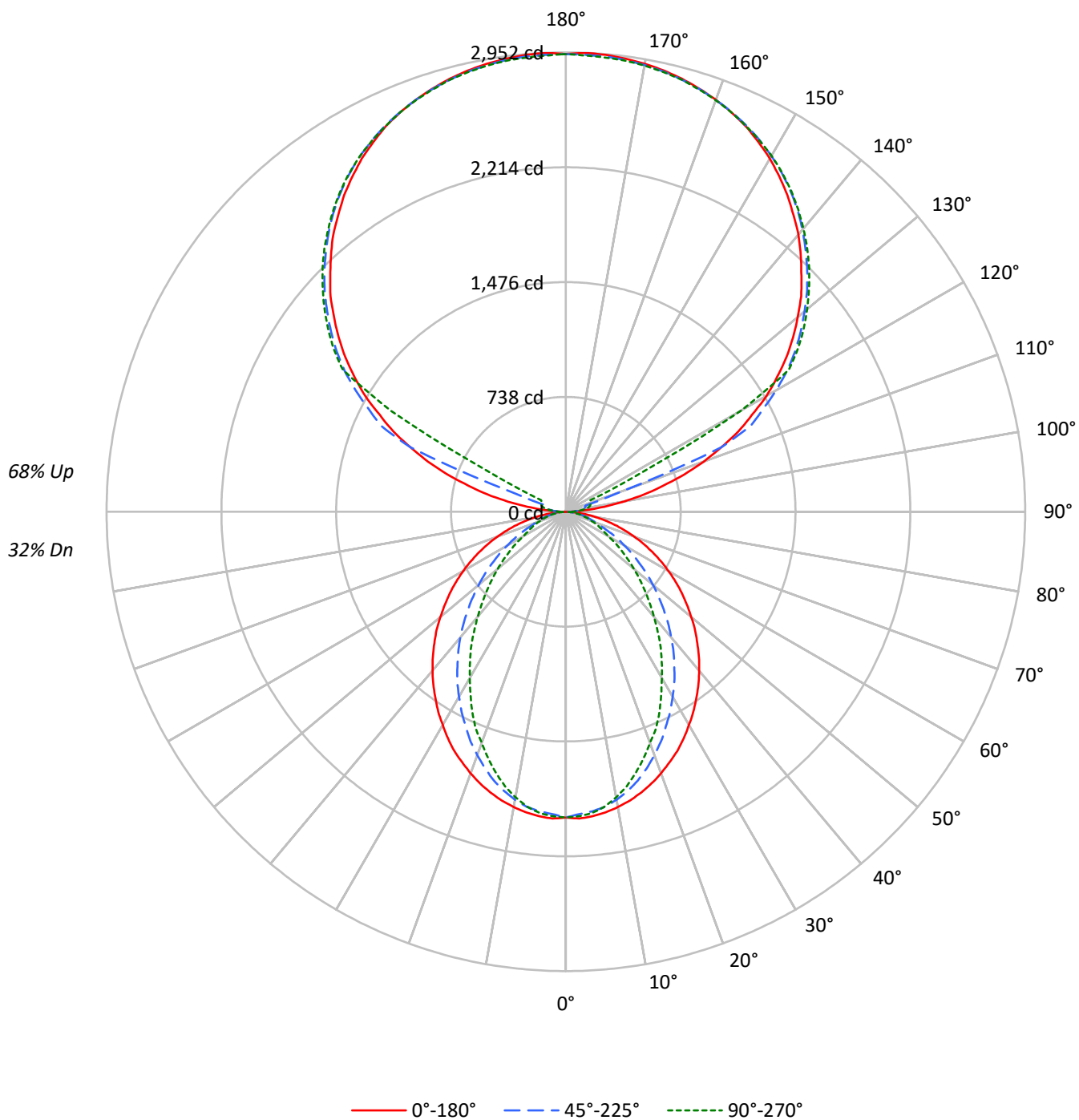
Lumens per Lamp: N/A
Luminaire Lumens: 12666.9 lumens
Efficiency: N/A
Efficacy: 86.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 146.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	103	103	103	103	93	93	93	93	73	73	73	56	56	56	40	40	40
1	94	90	86	83	85	81	78	75	65	63	61	49	48	47	35	35	34
2	86	79	73	68	77	71	66	62	57	54	51	44	42	40	31	30	29
3	78	70	63	57	70	63	57	52	50	46	43	39	36	34	28	26	25
4	72	62	54	48	64	56	49	44	45	40	37	35	32	29	25	23	22
5	66	55	47	42	59	50	43	38	40	35	32	31	28	25	23	21	19
6	61	49	42	36	55	45	38	33	36	31	28	28	25	22	21	19	17
7	56	44	37	32	51	41	34	29	33	28	24	26	22	20	19	17	15
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	15	14
9	48	37	30	25	44	34	27	23	27	23	19	22	18	16	16	14	12
10	45	34	27	22	41	31	25	21	25	21	17	20	17	14	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1434	1434	1434
5°	1436	1411	1420
10°	1422	1384	1374
15°	1402	1338	1303
20°	1377	1276	1216
25°	1350	1205	1131
30°	1314	1133	1024
35°	1280	1055	930
40°	1244	974	822
45°	1203	885	724
50°	1160	795	628
55°	1116	698	536
60°	1064	598	442
65°	1005	495	398
70°	933	399	360
75°	843	353	329
80°	712	296	286
85°	496	199	216

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1569 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.1	1.5
10°-20°	505.4	4.0
20°-30°	709.6	5.6
30°-40°	773.5	6.1
40°-50°	710.9	5.6
50°-60°	558.3	4.4
60°-70°	363.4	2.9
70°-80°	187.1	1.5
80°-90°	52.9	0.4
90°-100°	97.0	0.8
100°-110°	361.5	2.9
110°-120°	958.7	7.6
120°-130°	1590.2	12.6
130°-140°	1689.1	13.3
140°-150°	1569.9	12.4
150°-160°	1262.1	10.0
160°-170°	813.3	6.4
170°-180°	279.9	2.2
0°-30°	1399.1	11.0
0°-40°	2172.6	17.2
0°-60°	3441.9	27.2
0°-90°	4045.3	31.9
90°-120°	1417.2	11.2
90°-150°	6266.3	49.5
90°-180°	8622.0	68.1
0°-180°	12666.9	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	26	42	53	57	12
95°	138	68	83	94	92	164
105°	647	711	130	153	162	691
115°	1224	1260	1313	328	175	1205
125°	1730	1758	1798	1813	1819	1543
135°	2141	2175	2194	2215	2211	1654
145°	2484	2481	2517	2532	2522	1553
155°	2734	2715	2741	2754	2737	1260
165°	2881	2869	2875	2890	2875	814
175°	2947	2932	2936	2952	2930	280
180°	2941	2941	2941	2941	2941	

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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°	2.1	25.5	42.5	53.3	57.4
92.5°	53.3	44.8	51.0	55.4	57.4
95°	138.2	68.0	82.9	93.7	91.5
97.5°	248.9	74.5	108.4	114.9	117.0
100°	376.8	85.2	121.3	138.2	142.5
102.5°	517.0	512.9	125.6	148.9	155.4
105°	646.9	710.8	129.9	153.1	161.8
107.5°	798.0	851.0	134.2	157.4	166.0
110°	942.8	987.3	372.5	159.7	168.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1079.0	1117.1	1081.0	163.7	170.3
115°	1223.5	1259.6	1313.0	327.7	174.6
117.5°	1349.2	1391.6	1428.0	1123.5	566.0
120°	1489.6	1521.5	1559.9	1585.4	1298.1
122.5°	1608.7	1642.7	1685.4	1698.1	1700.4
125°	1730.0	1757.8	1798.2	1813.1	1819.4
127.5°	1840.6	1870.4	1902.5	1923.7	1925.8
130°	1945.0	1979.1	2002.3	2025.8	2023.9
132.5°	2051.4	2079.2	2102.4	2121.6	2119.6
135°	2140.9	2174.9	2193.9	2215.4	2211.1
137.5°	2234.3	2259.9	2281.3	2302.6	2296.2
140°	2325.8	2343.0	2366.2	2385.4	2374.8
142.5°	2402.6	2417.5	2445.1	2462.0	2451.4
145°	2483.5	2481.2	2517.3	2532.3	2521.7
147.5°	2553.5	2547.2	2583.3	2593.9	2585.6
150°	2621.7	2606.8	2640.9	2653.6	2643.0
152.5°	2679.1	2662.1	2694.0	2706.9	2692.0
155°	2734.5	2715.4	2740.9	2753.6	2736.7
157.5°	2779.1	2762.2	2781.4	2796.3	2779.1
160°	2817.6	2804.6	2817.6	2830.1	2815.3
162.5°	2851.4	2838.8	2849.4	2864.3	2845.1
165°	2881.2	2868.6	2874.9	2889.8	2874.9
167.5°	2904.7	2891.9	2898.4	2913.3	2894.2
170°	2923.9	2911.0	2915.3	2930.3	2911.0
172.5°	2936.5	2923.9	2928.2	2943.1	2923.9
175°	2947.2	2932.3	2936.5	2951.5	2930.3
177.5°	2951.5	2936.5	2938.8	2953.7	2934.6
180°	2940.9	2940.9	2940.9	2940.9	2940.9

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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	6.43	7.14	7.54	8.23	9.74	2.40	3.10	3.50	4.20	5.71
	3H	8.10	8.73	9.22	9.84	11.36	3.58	4.21	4.69	5.31	6.84
	4H	8.71	9.30	9.83	10.41	11.94	4.02	4.62	5.14	5.72	7.26
	6H	9.13	9.67	10.26	10.78	12.33	4.34	4.89	5.47	5.99	7.54
	8H	9.25	9.77	10.38	10.89	12.43	4.43	4.95	5.56	6.07	7.61
	12H	9.31	9.80	10.45	10.92	12.48	4.47	4.96	5.60	6.08	7.64
4H	2H	6.44	7.03	7.56	8.14	9.67	2.98	3.57	4.11	4.68	6.21
	3H	8.26	8.75	9.39	9.88	11.43	4.32	4.81	5.45	5.95	7.49
	4H	8.95	9.40	10.08	10.52	12.09	4.86	5.32	6.00	6.44	8.00
	6H	9.46	9.85	10.60	10.99	12.55	5.28	5.67	6.42	6.81	8.37
	8H	9.63	9.99	10.77	11.13	12.70	5.40	5.77	6.55	6.90	8.47
	12H	9.72	10.05	10.88	11.20	12.78	5.46	5.79	6.62	6.94	8.52
8H	4H	8.90	9.27	10.05	10.40	11.98	5.14	5.50	6.28	6.63	8.21
	6H	9.47	9.77	10.63	10.95	12.52	5.65	5.95	6.81	7.13	8.70
	8H	9.69	9.95	10.86	11.11	12.69	5.84	6.10	7.01	7.26	8.85
	12H	9.82	10.05	11.00	11.21	12.83	5.96	6.19	7.13	7.34	8.96
12H	4H	8.85	9.18	10.01	10.33	11.90	5.13	5.46	6.29	6.61	8.19
	6H	9.44	9.71	10.61	10.86	12.45	5.70	5.96	6.87	7.12	8.71
	8H	9.66	9.89	10.83	11.04	12.67	5.91	6.14	7.08	7.29	8.91

END OF REPORT