

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: P905991

Luminaire Tested: DFN2DIP-PN4F0-070D060US835-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905991
REPORT IS A COMBINATION OF REPORTS P901172 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-070D060US835-RLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

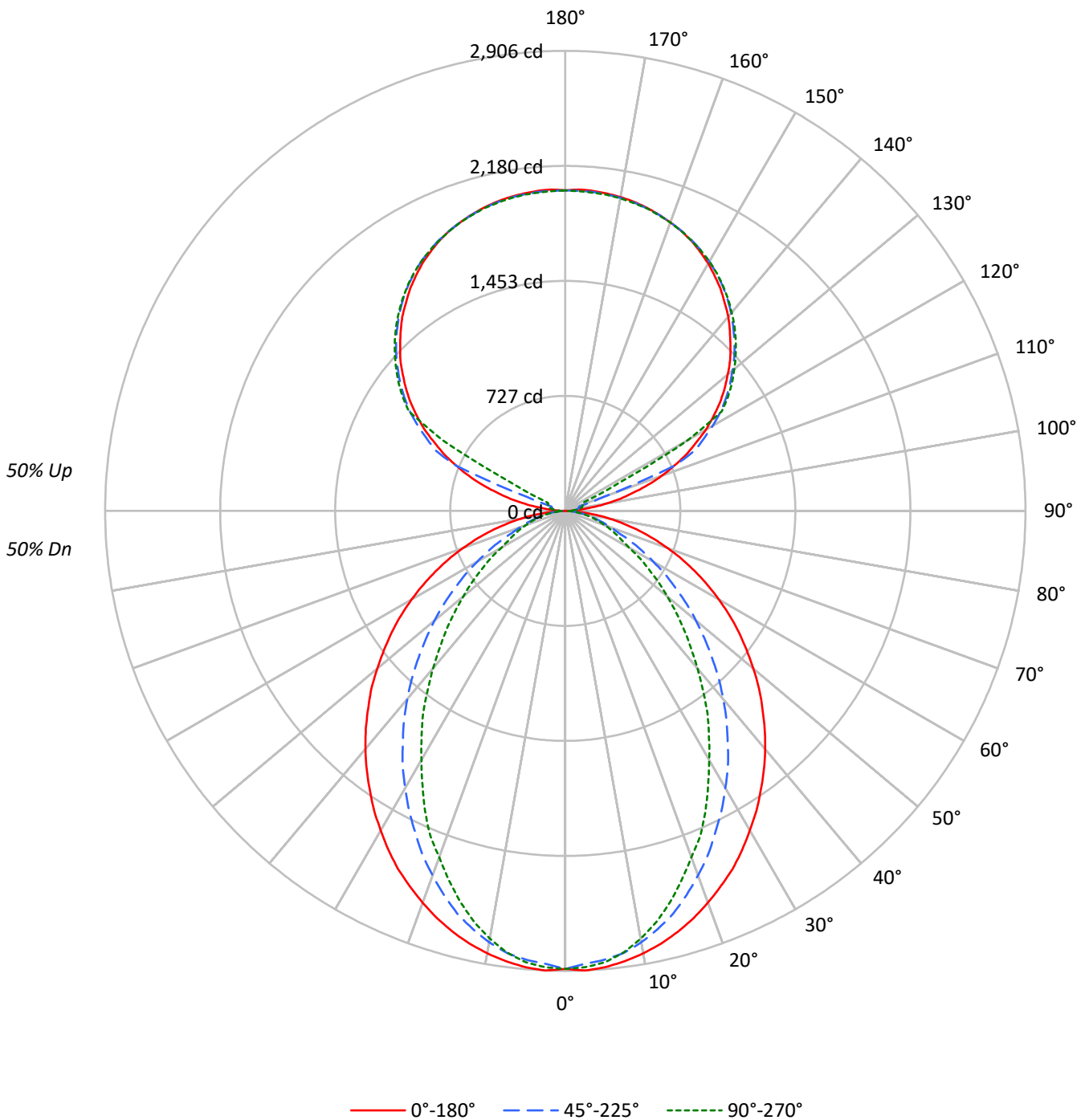
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11890.0 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: General Diffuse

Input Watts (W): 111.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	56	56	56	50
1	98	94	90	87	91	87	84	81	74	72	69	62	60	59	50	49	48	48	48	48	43
2	90	83	77	72	83	77	72	67	65	62	58	55	52	50	45	43	41	41	41	41	37
3	82	73	66	60	76	68	62	57	58	53	50	49	45	43	40	38	36	36	36	36	32
4	76	65	57	52	70	60	54	49	52	47	43	44	40	37	36	34	31	31	31	31	28
5	70	58	50	45	64	54	47	42	47	41	37	40	35	32	33	30	28	28	28	28	24
6	64	52	45	39	59	49	42	37	42	37	33	36	32	29	30	27	25	25	25	25	22
7	59	47	40	34	55	44	37	32	38	33	29	33	29	25	28	24	22	22	22	22	19
8	55	43	36	30	51	40	34	29	35	30	26	30	26	23	25	22	20	20	20	20	18
9	52	40	32	27	48	37	30	26	32	27	23	28	24	21	24	20	18	18	18	18	16
10	48	36	29	25	45	34	28	23	30	25	21	26	22	19	22	19	17	17	17	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2112	2112	2112
5°	2115	2079	2092
10°	2094	2038	2024
15°	2065	1971	1919
20°	2027	1878	1791
25°	1988	1775	1666
30°	1936	1668	1508
35°	1884	1554	1370
40°	1832	1435	1210
45°	1771	1303	1066
50°	1708	1171	925
55°	1643	1029	790
60°	1567	880	650
65°	1480	729	586
70°	1374	588	531
75°	1241	519	484
80°	1048	437	421
85°	730	293	319

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1771 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	271.1	2.3
10°-20°	744.3	6.3
20°-30°	1045.0	8.8
30°-40°	1139.2	9.6
40°-50°	1047.0	8.8
50°-60°	822.3	6.9
60°-70°	535.2	4.5
70°-80°	275.5	2.3
80°-90°	73.9	0.6
90°-100°	66.8	0.6
100°-110°	248.9	2.1
110°-120°	660.2	5.6
120°-130°	1094.9	9.2
130°-140°	1163.0	9.8
140°-150°	1080.9	9.1
150°-160°	869.0	7.3
160°-170°	560.0	4.7
170°-180°	192.7	1.6
0°-30°	2060.5	17.3
0°-40°	3199.7	26.9
0°-60°	5068.9	42.6
0°-90°	5953.5	50.1
90°-120°	975.8	8.2
90°-150°	4314.7	36.3
90°-180°	5936.0	49.9
0°-180°	11890.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2893	2893	2893	2893	2893	
5°	2893	2880	2846	2870	2862	274
15°	2752	2723	2634	2584	2558	775
25°	2498	2414	2241	2134	2094	1149
35°	2152	2019	1788	1623	1566	1347
45°	1760	1584	1309	1123	1060	1359
55°	1338	1134	851	694	644	1195
65°	903	691	456	367	359	896
75°	482	298	209	191	189	509
85°	112	58	50	50	50	129
90°	1	18	29	37	40	11
95°	95	47	57	65	63	113
105°	445	489	89	105	111	476
115°	842	867	904	226	120	829
125°	1191	1210	1238	1248	1253	1062
135°	1474	1498	1511	1525	1522	1139
145°	1710	1708	1733	1744	1736	1069
155°	1883	1870	1887	1896	1884	868
165°	1984	1975	1980	1990	1980	560
175°	2029	2019	2022	2032	2018	193
180°	2025	2025	2025	2025	2025	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2893.1	2893.1	2893.1	2893.1	2893.1
2.5°	2906.1	2893.1	2864.2	2890.6	2885.3
5°	2893.1	2880.0	2845.9	2869.5	2861.7
7.5°	2869.5	2853.9	2817.3	2827.5	2814.5
10°	2838.1	2819.8	2767.5	2759.5	2743.9
12.5°	2798.9	2775.3	2704.5	2688.9	2660.0
15°	2751.7	2722.8	2633.9	2584.2	2558.1
17.5°	2696.7	2654.8	2544.8	2487.2	2445.3
20°	2633.9	2581.4	2450.6	2385.3	2327.5
22.5°	2565.9	2505.6	2353.6	2264.7	2225.6
25°	2497.8	2413.9	2241.1	2133.9	2094.5
27.5°	2416.7	2327.5	2136.4	2013.4	1953.1
30°	2330.3	2230.6	2021.1	1887.8	1817.0
32.5°	2246.4	2125.9	1911.4	1754.2	1688.6
35°	2152.2	2018.6	1788.4	1623.4	1565.6
37.5°	2060.6	1916.4	1673.1	1492.2	1427.0
40°	1963.6	1806.7	1552.5	1366.7	1298.6
42.5°	1864.2	1696.7	1432.2	1238.3	1173.1
45°	1759.5	1583.9	1309.2	1123.1	1060.3
47.5°	1660.0	1474.2	1191.4	1005.3	947.8
50°	1550.0	1364.2	1076.1	895.3	840.6
52.5°	1442.5	1246.1	966.1	793.3	743.6
55°	1337.8	1133.6	850.8	693.9	644.2
57.5°	1230.6	1021.1	748.9	602.2	560.3
60°	1120.6	911.1	641.4	508.1	466.1
62.5°	1013.3	803.9	549.7	424.2	403.3
65°	903.3	691.1	455.6	366.7	358.6
67.5°	798.6	586.4	366.7	321.9	314.2
70°	688.6	484.4	303.6	277.5	266.9
72.5°	583.9	390.0	253.9	233.1	227.8
75°	481.7	298.3	209.4	191.1	188.6
77.5°	379.7	211.9	165.0	154.4	149.2
80°	285.3	151.9	125.6	115.3	115.3
82.5°	198.9	102.2	86.4	81.1	81.1
85°	112.5	57.5	49.7	49.7	49.7
87.5°	41.9	20.8	20.8	18.3	18.3
90°	1.4	17.6	29.2	36.7	39.5
92.5°	36.7	30.8	35.1	38.1	39.5
95°	95.2	46.8	57.1	64.6	63.0
97.5°	171.4	51.3	74.6	79.2	80.6
100°	259.4	58.6	83.5	95.2	98.1
102.5°	356.0	353.2	86.5	102.5	107.0
105°	445.4	489.4	89.4	105.4	111.4
107.5°	549.5	586.0	92.4	108.4	114.3
110°	649.2	679.8	256.5	110.0	115.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	742.9	769.2	744.3	112.7	117.3
115°	842.5	867.4	904.1	225.7	120.2
117.5°	928.9	958.2	983.2	773.6	389.7
120°	1025.7	1047.6	1074.1	1091.6	893.8
122.5°	1107.6	1131.1	1160.5	1169.2	1170.8
125°	1191.2	1210.3	1238.1	1248.4	1252.7
127.5°	1267.4	1287.9	1310.0	1324.6	1326.0
130°	1339.2	1362.7	1378.7	1394.9	1393.5
132.5°	1412.5	1431.6	1447.6	1460.8	1459.4
135°	1474.1	1497.6	1510.6	1525.4	1522.4
137.5°	1538.4	1556.0	1570.8	1585.4	1581.1
140°	1601.4	1613.3	1629.3	1642.5	1635.2
142.5°	1654.3	1664.6	1683.6	1695.2	1687.9
145°	1710.0	1708.4	1733.3	1743.6	1736.3
147.5°	1758.2	1753.8	1778.7	1786.0	1780.3
150°	1805.2	1794.9	1818.4	1827.1	1819.8
152.5°	1844.7	1833.0	1854.9	1863.8	1853.5
155°	1882.8	1869.7	1887.3	1896.0	1884.3
157.5°	1913.6	1901.9	1915.1	1925.4	1913.6
160°	1940.0	1931.1	1940.0	1948.7	1938.5
162.5°	1963.3	1954.6	1961.9	1972.2	1959.0
165°	1983.9	1975.2	1979.5	1989.8	1979.5
167.5°	2000.0	1991.2	1995.7	2006.0	1992.7
170°	2013.3	2004.4	2007.4	2017.6	2004.4
172.5°	2022.0	2013.3	2016.2	2026.5	2013.3
175°	2029.3	2019.0	2022.0	2032.2	2017.6
177.5°	2032.2	2022.0	2023.5	2033.8	2020.6
180°	2024.9	2024.9	2024.9	2024.9	2024.9



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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	9.76	10.59	10.72	11.56	12.84	5.72	6.55	6.69	7.53	8.80
	3H	11.44	12.18	12.41	13.16	14.46	6.91	7.66	7.89	8.64	9.93
	4H	12.05	12.75	13.04	13.74	15.04	7.36	8.07	8.35	9.05	10.36
	6H	12.47	13.12	13.47	14.11	15.43	7.69	8.33	8.68	9.32	10.64
	8H	12.60	13.22	13.61	14.22	15.54	7.78	8.39	8.78	9.40	10.71
	12H	12.66	13.25	13.67	14.25	15.59	7.82	8.40	8.83	9.41	10.74
4H	2H	9.78	10.48	10.77	11.47	12.77	6.32	7.02	7.31	8.01	9.31
	3H	11.61	12.19	12.61	13.21	14.53	7.67	8.25	8.67	9.27	10.59
	4H	12.30	12.84	13.31	13.84	15.19	8.22	8.75	9.23	9.76	11.10
	6H	12.82	13.28	13.84	14.31	15.65	8.64	9.10	9.66	10.13	11.47
	8H	13.00	13.43	14.02	14.45	15.80	8.77	9.20	9.79	10.22	11.57
	12H	13.09	13.48	14.14	14.52	15.88	8.84	9.22	9.88	10.26	11.62
8H	4H	12.27	12.70	13.29	13.72	15.08	8.50	8.93	9.53	9.95	11.31
	6H	12.84	13.19	13.89	14.26	15.61	9.02	9.37	10.07	10.44	11.79
	8H	13.06	13.37	14.11	14.42	15.79	9.21	9.52	10.27	10.58	11.95
	12H	13.20	13.47	14.26	14.52	15.93	9.33	9.61	10.39	10.65	12.07
12H	4H	12.22	12.61	13.26	13.65	15.01	8.51	8.89	9.55	9.93	11.29
	6H	12.82	13.13	13.87	14.18	15.55	9.07	9.38	10.13	10.43	11.80
	8H	13.04	13.31	14.10	14.36	15.77	9.28	9.56	10.34	10.60	12.02