

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: P905120

Luminaire Tested: DFN2DIP-4P4F0-070D080US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905120
REPORT IS A COMBINATION OF REPORTS P899148 AND P895967
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-070D080US835-RLLFLL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

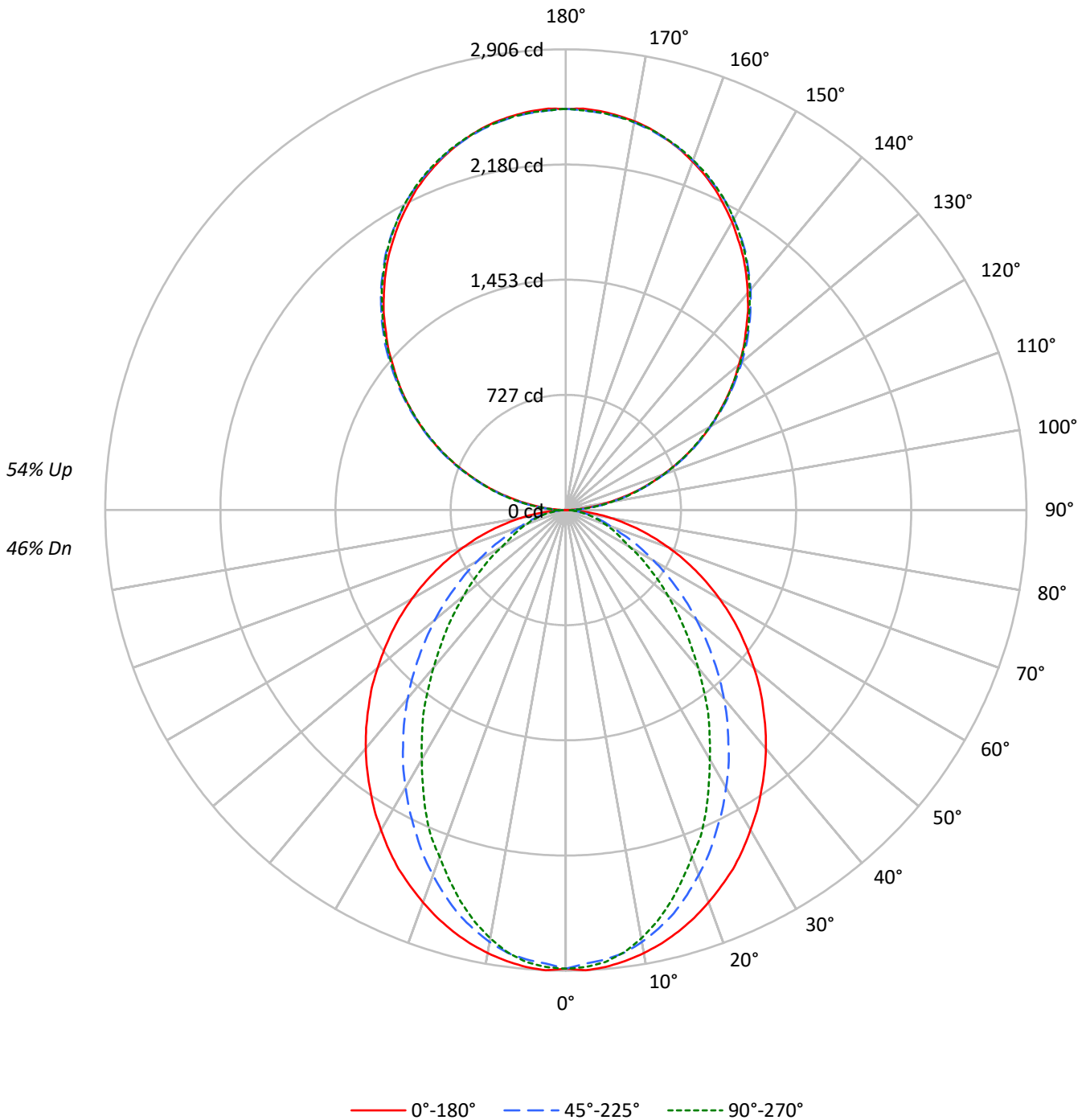
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13030.0 lumens
Efficiency: N/A
Efficacy: 88.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 147.8
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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	46	46	46	46
1	97	93	89	86	89	86	82	80	72	69	67	59	57	56	47	46	45	39	39	39	39
2	89	82	76	71	81	75	70	66	63	60	56	52	49	47	42	40	38	34	34	34	34
3	81	72	65	60	74	67	61	56	56	52	48	46	43	40	37	35	33	29	29	29	29
4	75	64	57	51	68	59	53	48	50	45	41	42	38	35	34	31	29	25	25	25	25
5	69	57	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26	22	22	22	22
6	63	52	44	38	58	48	41	36	41	35	31	34	30	27	28	25	23	20	20	20	20
7	59	47	39	34	54	43	37	32	37	32	28	31	27	24	26	23	20	18	18	18	18
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	18	16	16	16	16
9	51	39	32	27	47	36	30	25	31	26	22	26	22	20	22	19	17	15	15	15	15
10	47	36	29	24	44	33	27	23	29	24	20	24	20	18	20	17	15	13	13	13	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1877	1877	1877
5°	1880	1848	1860
10°	1862	1812	1800
15°	1836	1753	1707
20°	1802	1671	1593
25°	1768	1579	1482
30°	1721	1484	1342
35°	1676	1383	1219
40°	1629	1278	1078
45°	1576	1161	949
50°	1520	1043	824
55°	1462	917	704
60°	1395	785	580
65°	1317	651	523
70°	1224	526	474
75°	1106	465	433
80°	936	392	378
85°	654	265	289

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1916 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	271.1	2.1
10°-20°	744.3	5.7
20°-30°	1045.0	8.0
30°-40°	1139.2	8.7
40°-50°	1047.0	8.0
50°-60°	822.3	6.3
60°-70°	535.2	4.1
70°-80°	275.5	2.1
80°-90°	77.5	0.6
90°-100°	156.6	1.2
100°-110°	497.5	3.8
110°-120°	851.3	6.5
120°-130°	1119.6	8.6
130°-140°	1256.7	9.6
140°-150°	1232.3	9.5
150°-160°	1033.7	7.9
160°-170°	685.6	5.3
170°-180°	239.6	1.8
0°-30°	2060.5	15.8
0°-40°	3199.7	24.6
0°-60°	5068.9	38.9
0°-90°	5957.2	45.7
90°-120°	1505.3	11.6
90°-150°	5113.9	39.2
90°-180°	7073.0	54.3
0°-180°	13030.0	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°	2	28	75	70	72	13
95°	111	133	136	136	133	124
105°	459	465	470	474	474	485
115°	854	866	863	860	854	845
125°	1242	1262	1256	1249	1246	1110
135°	1607	1631	1635	1633	1627	1242
145°	1951	1966	1979	1981	1972	1219
155°	2231	2237	2244	2255	2248	1027
165°	2427	2425	2425	2440	2429	685
175°	2526	2519	2515	2530	2517	240
180°	2530	2530	2530	2530	2530	



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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°	2.3	27.5	74.8	70.2	72.5
92.5°	47.3	64.1	66.4	68.6	68.6
95°	111.4	132.7	136.5	136.5	132.7
97.5°	185.4	205.2	213.6	213.6	213.6
100°	270.8	288.3	294.4	294.4	292.1
102.5°	360.8	373.8	382.1	384.4	382.1
105°	459.2	465.3	469.9	473.7	473.7
107.5°	556.8	566.0	566.0	567.5	556.8
110°	651.4	663.6	663.6	663.6	657.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	753.6	766.6	764.3	758.2	753.6
115°	854.3	866.5	862.7	860.4	854.3
117.5°	954.2	971.0	960.3	954.2	948.1
120°	1054.9	1071.7	1054.9	1054.9	1048.0
122.5°	1146.4	1167.8	1157.1	1151.0	1146.4
125°	1242.5	1261.6	1255.5	1248.6	1246.4
127.5°	1336.4	1360.0	1351.6	1342.5	1336.4
130°	1424.1	1451.5	1447.7	1443.2	1434.8
132.5°	1522.5	1543.8	1545.4	1534.7	1528.6
135°	1607.1	1630.8	1635.4	1633.1	1627.0
137.5°	1701.7	1720.8	1724.6	1723.1	1713.9
140°	1784.9	1803.9	1814.6	1814.6	1806.2
142.5°	1870.3	1889.4	1895.5	1897.8	1889.4
145°	1951.2	1966.4	1978.6	1980.9	1972.5
147.5°	2023.6	2042.7	2051.8	2055.7	2047.3
150°	2098.4	2111.3	2119.7	2126.6	2119.7
152.5°	2164.7	2177.7	2188.4	2196.8	2188.4
155°	2231.1	2237.2	2244.1	2254.7	2247.9
157.5°	2288.3	2292.9	2296.7	2311.9	2301.3
160°	2339.4	2344.0	2346.3	2359.2	2350.1
162.5°	2386.7	2386.7	2389.0	2403.5	2392.8
165°	2427.1	2424.8	2424.8	2440.1	2429.4
167.5°	2463.7	2456.9	2456.9	2472.1	2461.4
170°	2491.2	2485.1	2482.8	2498.1	2485.1
172.5°	2510.3	2504.2	2501.9	2517.1	2504.2
175°	2525.5	2519.4	2514.8	2530.1	2517.1
177.5°	2533.9	2527.8	2523.2	2536.2	2523.2
180°	2530.1	2530.1	2530.1	2530.1	2530.1



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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	8.94	9.73	9.94	10.74	12.07	4.90	5.70	5.90	6.70	8.03
	3H	10.62	11.33	11.63	12.35	13.70	6.09	6.80	7.10	7.81	9.17
	4H	11.23	11.90	12.25	12.92	14.28	6.54	7.21	7.56	8.23	9.59
	6H	11.65	12.27	12.69	13.30	14.67	6.86	7.48	7.89	8.50	9.87
	8H	11.78	12.37	12.82	13.41	14.78	6.95	7.54	7.99	8.58	9.95
	12H	11.85	12.41	12.89	13.44	14.83	6.99	7.55	8.03	8.58	9.98
4H	2H	8.95	9.63	9.98	10.64	12.01	5.49	6.17	6.52	7.18	8.55
	3H	10.78	11.34	11.82	12.39	13.77	6.84	7.40	7.88	8.45	9.82
	4H	11.48	11.99	12.52	13.03	14.43	7.39	7.90	8.43	8.94	10.34
	6H	12.00	12.44	13.05	13.50	14.89	7.81	8.25	8.86	9.31	10.71
	8H	12.18	12.59	13.23	13.64	15.05	7.94	8.35	8.99	9.40	10.81
	12H	12.27	12.64	13.35	13.71	15.13	8.00	8.37	9.08	9.44	10.86
8H	4H	11.45	11.86	12.50	12.91	14.32	7.67	8.08	8.73	9.14	10.54
	6H	12.02	12.36	13.09	13.45	14.86	8.19	8.53	9.27	9.63	11.03
	8H	12.24	12.53	13.32	13.61	15.04	8.38	8.68	9.47	9.76	11.19
	12H	12.38	12.64	13.47	13.71	15.18	8.50	8.77	9.59	9.84	11.31
12H	4H	11.40	11.77	12.47	12.84	14.25	7.68	8.05	8.75	9.12	10.53
	6H	11.99	12.29	13.08	13.37	14.80	8.24	8.54	9.33	9.62	11.05
	8H	12.22	12.48	13.30	13.55	15.02	8.45	8.72	9.54	9.79	11.26