

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: P905480

Luminaire Tested: DFN2DIP-HX4F0-070D100US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905480
REPORT IS A COMBINATION OF REPORTS P899413 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-070D100US835-FLLFL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

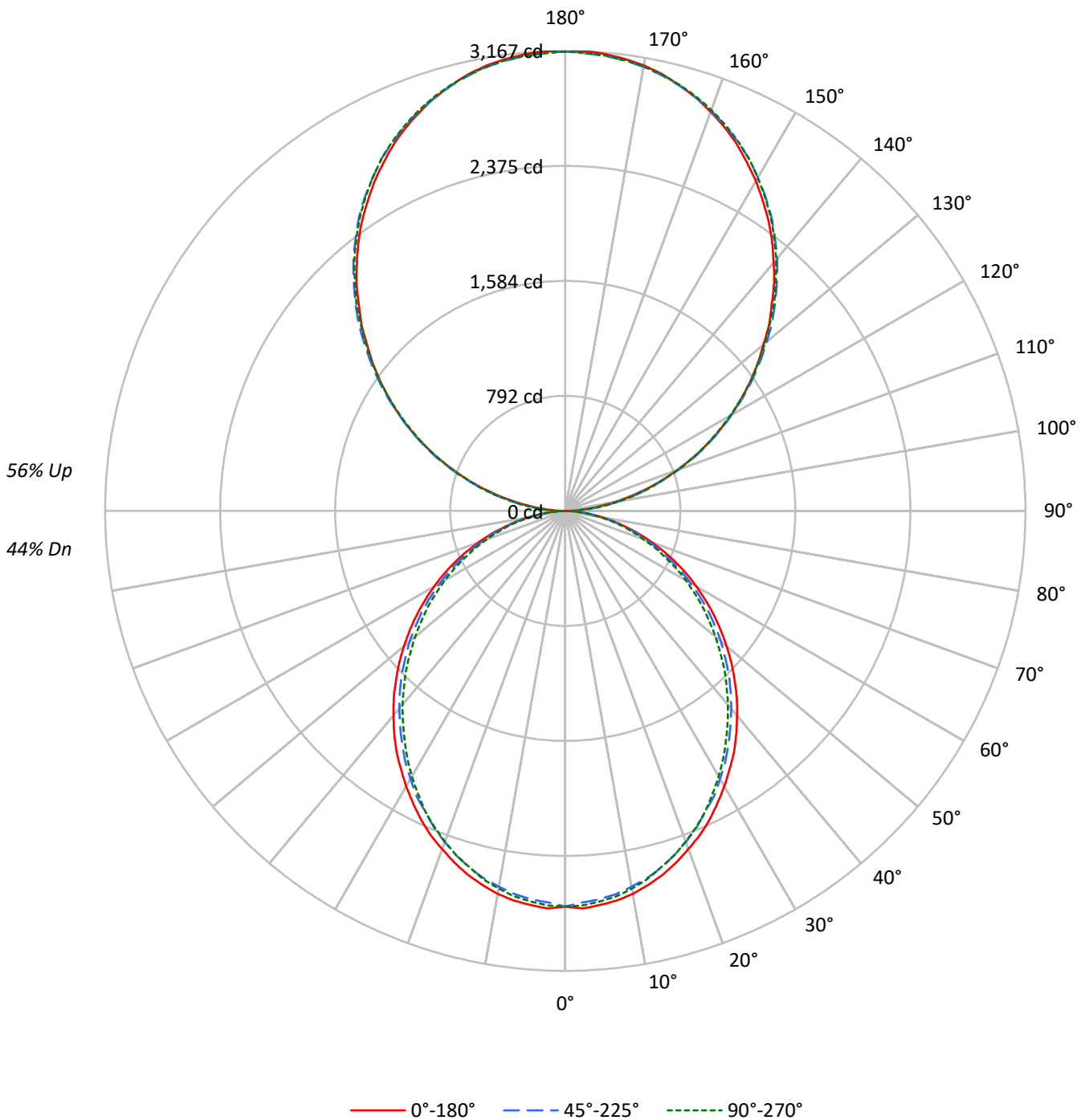
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15780.0 lumens
Efficiency: N/A
Efficacy: 127.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 124
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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	80	80	80	65	65	65	51	51	51	44			44
1	96	92	88	85	88	84	81	78	70	68	66	57	55	54	45	44	43	37			37
2	88	80	74	69	80	74	69	64	61	58	54	50	47	45	39	38	36	31			31
3	80	71	63	58	73	65	59	54	54	49	46	44	41	38	35	33	31	26			26
4	73	63	55	49	67	58	51	45	48	43	39	39	36	33	31	29	26	23			23
5	67	56	48	42	61	51	44	39	43	38	33	35	31	28	28	25	23	20			20
6	62	50	42	36	56	46	39	34	39	33	29	32	28	25	25	23	20	17			17
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18	15			15
8	53	41	33	28	48	38	31	26	32	27	23	26	22	19	21	18	16	14			14
9	49	37	30	25	45	35	28	23	29	24	20	24	20	17	20	17	15	12			12
10	46	34	27	22	42	32	25	21	27	22	18	22	19	16	18	15	13	11			11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2025	2025	2025
5°	2029	1997	2011
10°	2012	1971	1983
15°	1983	1938	1941
20°	1943	1893	1898
25°	1904	1840	1847
30°	1854	1790	1783
35°	1807	1731	1716
40°	1749	1671	1651
45°	1691	1612	1586
50°	1628	1549	1509
55°	1562	1477	1439
60°	1487	1391	1359
65°	1406	1302	1264
70°	1302	1193	1163
75°	1158	1063	1069
80°	985	898	889
85°	715	612	591

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2385 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	256.4	1.6
10°-20°	721.3	4.6
20°-30°	1060.0	6.7
30°-40°	1231.1	7.8
40°-50°	1229.6	7.8
50°-60°	1072.2	6.8
60°-70°	792.6	5.0
70°-80°	448.4	2.8
80°-90°	127.4	0.8
90°-100°	195.7	1.2
100°-110°	621.8	3.9
110°-120°	1064.1	6.7
120°-130°	1399.5	8.9
130°-140°	1570.9	10.0
140°-150°	1540.4	9.8
150°-160°	1292.2	8.2
160°-170°	856.9	5.4
170°-180°	299.5	1.9
0°-30°	2037.7	12.9
0°-40°	3268.8	20.7
0°-60°	5570.6	35.3
0°-90°	6939.0	44.0
90°-120°	1881.6	11.9
90°-150°	6392.4	40.5
90°-180°	8841.0	56.0
0°-180°	15780.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2724	2724	2724	2724	2724	
5°	2724	2714	2685	2705	2700	259
15°	2593	2577	2543	2554	2541	730
25°	2347	2326	2281	2286	2281	1080
35°	2025	1998	1956	1941	1928	1264
45°	1648	1629	1590	1561	1550	1271
55°	1247	1231	1200	1168	1155	1115
65°	841	825	799	775	762	831
75°	440	435	422	406	411	470
85°	107	105	102	94	92	120
90°	3	34	93	88	91	15
95°	139	166	171	171	166	155
105°	574	582	587	592	592	606
115°	1068	1083	1078	1076	1068	1056
125°	1553	1577	1569	1561	1558	1388
135°	2009	2038	2044	2041	2034	1553
145°	2439	2458	2473	2476	2466	1524
155°	2789	2796	2805	2818	2810	1284
165°	3034	3031	3031	3050	3037	856
175°	3157	3149	3144	3163	3146	300
180°	3163	3163	3163	3163	3163	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2723.7	2723.7	2723.7	2723.7	2723.7
2.5°	2739.6	2726.5	2697.6	2723.7	2718.7
5°	2723.7	2713.5	2684.6	2705.4	2700.4
7.5°	2705.4	2689.8	2660.9	2682.1	2676.8
10°	2676.8	2658.4	2627.0	2647.9	2640.1
12.5°	2637.3	2621.8	2590.4	2603.4	2598.1
15°	2592.9	2577.3	2543.1	2553.7	2540.6
17.5°	2537.8	2522.3	2488.1	2501.2	2488.1
20°	2477.5	2462.0	2425.3	2433.1	2422.8
22.5°	2417.5	2393.9	2359.7	2359.7	2354.4
25°	2346.7	2325.8	2281.4	2286.4	2281.4
27.5°	2268.0	2249.7	2215.8	2208.0	2194.9
30°	2189.7	2168.5	2129.4	2121.6	2111.0
32.5°	2105.7	2090.2	2048.2	2032.4	2021.8
35°	2024.6	1998.5	1956.5	1940.7	1927.6
37.5°	1932.9	1909.3	1867.3	1849.0	1835.9
40°	1838.7	1817.6	1775.6	1752.3	1741.7
42.5°	1747.0	1725.9	1684.2	1657.8	1642.2
45°	1647.5	1629.2	1589.7	1561.1	1550.5
47.5°	1550.5	1532.2	1490.2	1461.3	1445.8
50°	1448.3	1435.2	1398.5	1361.9	1348.8
52.5°	1348.8	1330.5	1296.6	1267.7	1249.3
55°	1246.8	1231.0	1199.6	1168.2	1155.1
57.5°	1144.6	1131.5	1097.3	1065.9	1055.4
60°	1042.3	1032.0	995.4	966.5	958.7
62.5°	942.8	924.5	898.4	872.3	861.7
65°	840.9	825.0	798.9	775.3	762.2
67.5°	736.1	722.8	699.4	681.1	670.5
70°	639.1	628.6	604.9	586.6	576.3
72.5°	539.6	529.1	516.0	497.7	489.9
75°	439.9	434.9	421.5	406.0	411.3
77.5°	351.0	340.4	335.1	327.3	319.6
80°	262.0	259.3	254.0	246.2	240.9
82.5°	178.1	178.1	175.6	165.1	165.1
85°	107.3	104.8	102.3	94.2	91.7
87.5°	47.2	42.0	36.7	28.9	26.1
90°	2.9	34.3	93.4	87.7	90.6
92.5°	59.1	80.1	83.0	85.8	85.8
95°	139.2	165.9	170.7	170.7	165.9
97.5°	231.7	256.5	267.0	267.0	267.0
100°	338.5	360.4	368.0	368.0	365.2
102.5°	451.0	467.2	477.7	480.5	477.7
105°	574.0	581.6	587.3	592.1	592.1
107.5°	696.0	707.5	707.5	709.4	696.0
110°	814.3	829.5	829.5	829.5	821.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	942.0	958.2	955.4	947.7	942.0
115°	1067.9	1083.1	1078.4	1075.5	1067.9
117.5°	1192.8	1213.8	1200.4	1192.8	1185.1
120°	1318.6	1339.6	1318.6	1318.6	1310.1
122.5°	1433.0	1459.7	1446.4	1438.8	1433.0
125°	1553.2	1577.0	1569.4	1560.8	1558.0
127.5°	1670.5	1700.0	1689.5	1678.1	1670.5
130°	1780.1	1814.4	1809.7	1803.9	1793.5
132.5°	1903.1	1929.8	1931.7	1918.4	1910.7
135°	2008.9	2038.5	2044.2	2041.4	2033.7
137.5°	2127.2	2151.0	2155.8	2153.9	2142.4
140°	2231.1	2254.9	2268.3	2268.3	2257.8
142.5°	2337.9	2361.7	2369.3	2372.2	2361.7
145°	2438.9	2458.0	2473.3	2476.1	2465.6
147.5°	2529.5	2553.4	2564.8	2569.6	2559.1
150°	2623.0	2639.2	2649.7	2658.2	2649.7
152.5°	2705.9	2722.1	2735.5	2746.0	2735.5
155°	2788.9	2796.5	2805.1	2818.4	2809.8
157.5°	2860.4	2866.1	2870.9	2889.9	2876.6
160°	2924.3	2930.0	2932.8	2949.0	2937.6
162.5°	2983.4	2983.4	2986.2	3004.3	2991.0
165°	3033.9	3031.0	3031.0	3050.1	3036.8
167.5°	3079.7	3071.1	3071.1	3090.2	3076.8
170°	3114.0	3106.4	3103.5	3122.6	3106.4
172.5°	3137.8	3130.2	3127.3	3146.4	3130.2
175°	3156.9	3149.3	3143.6	3162.6	3146.4
177.5°	3167.4	3159.8	3154.0	3170.2	3154.0
180°	3162.6	3162.6	3162.6	3162.6	3162.6



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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	9.14	9.95	10.15	10.97	12.32	8.71	9.52	9.71	10.53	11.89
	3H	10.80	11.52	11.81	12.55	13.92	10.32	11.05	11.34	12.08	13.45
	4H	11.38	12.07	12.41	13.10	14.48	10.91	11.60	11.94	12.63	14.01
	6H	11.78	12.41	12.82	13.45	14.84	11.30	11.94	12.34	12.97	14.37
	8H	11.88	12.49	12.93	13.54	14.93	11.41	12.01	12.45	13.06	14.45
	12H	11.93	12.50	12.98	13.55	14.96	11.45	12.02	12.50	13.07	14.48
4H	2H	9.59	10.28	10.63	11.31	12.69	9.25	9.94	10.29	10.97	12.35
	3H	11.46	12.03	12.50	13.09	14.48	11.06	11.64	12.11	12.70	14.09
	4H	12.17	12.70	13.22	13.74	15.16	11.76	12.29	12.82	13.34	14.76
	6H	12.68	13.14	13.74	14.21	15.62	12.27	12.73	13.33	13.80	15.21
	8H	12.83	13.25	13.89	14.32	15.75	12.42	12.84	13.48	13.91	15.34
	12H	12.90	13.29	13.98	14.36	15.80	12.48	12.86	13.56	13.94	15.38
8H	4H	12.36	12.79	13.42	13.85	15.28	12.00	12.42	13.06	13.49	14.92
	6H	12.99	13.34	14.08	14.45	15.88	12.63	12.98	13.72	14.09	15.51
	8H	13.21	13.52	14.31	14.61	16.06	12.85	13.15	13.94	14.24	15.69
	12H	13.34	13.61	14.44	14.70	16.18	12.96	13.23	14.06	14.31	15.80
12H	4H	12.35	12.73	13.43	13.81	15.24	11.99	12.38	13.07	13.45	14.89
	6H	13.02	13.33	14.12	14.42	15.87	12.67	12.98	13.76	14.07	15.51
	8H	13.26	13.53	14.36	14.62	16.10	12.91	13.18	14.00	14.26	15.75