

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: P928734

Luminaire Tested: DFN2DIP-HX4F0-100D100US930-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928734
REPORT IS A COMBINATION OF REPORTS P900940 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-100D100US930-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

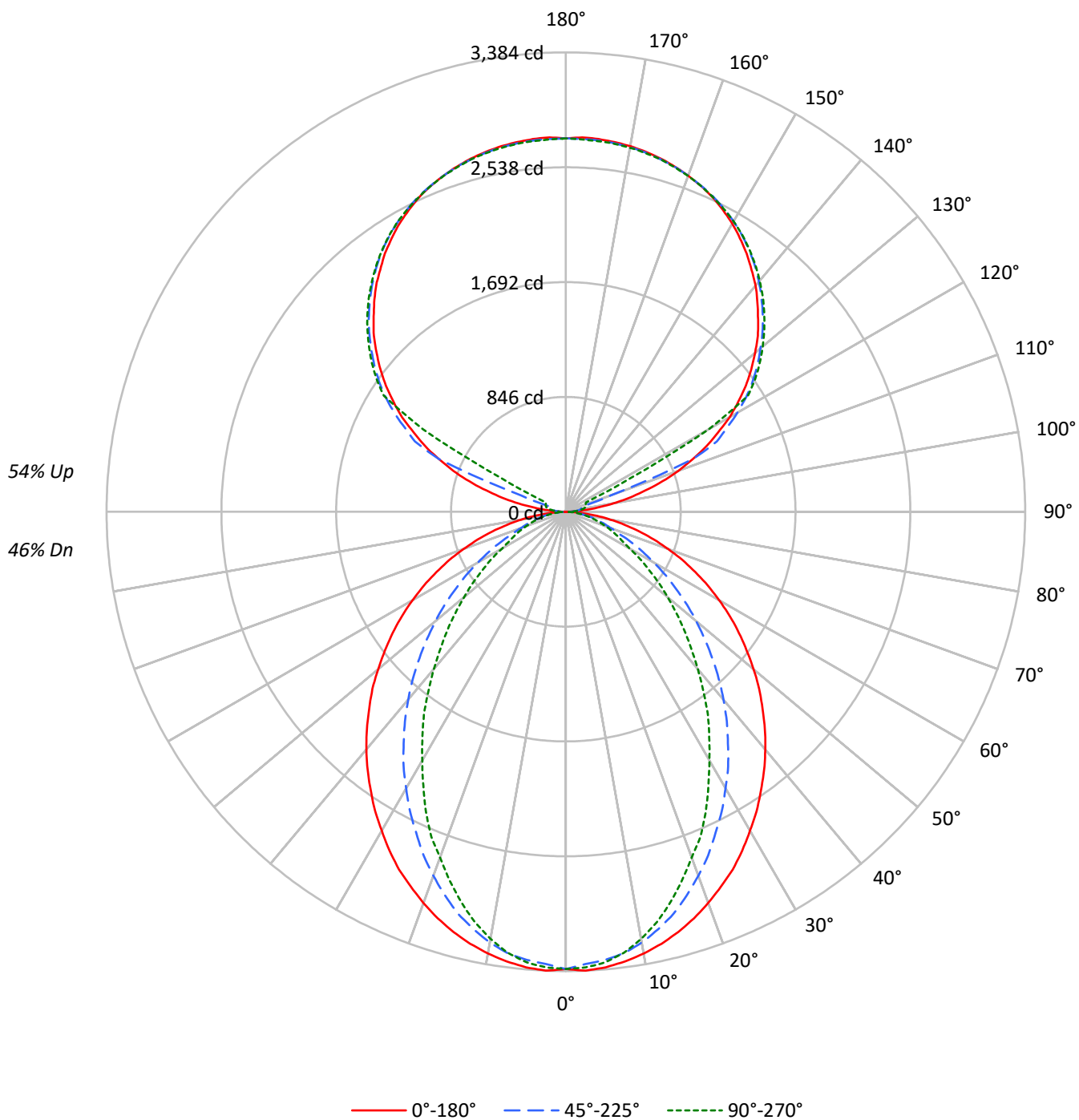
Lumens per Lamp: N/A
Luminaire Lumens: 14996.0 lumens
Efficiency: N/A
Efficacy: 85.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 175.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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	50	30	10
RCR																				
0	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53			46
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45			40
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39			34
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34			29
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29			26
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26			23
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23			20
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21			18
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19			16
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17			15
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15			13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2505	2505	2505
5°	2509	2465	2481
10°	2484	2417	2400
15°	2450	2337	2275
20°	2405	2227	2122
25°	2359	2104	1975
30°	2297	1978	1787
35°	2236	1842	1622
40°	2174	1701	1434
45°	2103	1545	1262
50°	2029	1388	1095
55°	1951	1219	935
60°	1861	1043	769
65°	1758	864	693
70°	1633	697	627
75°	1476	615	571
80°	1249	517	495
85°	873	346	373

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2103 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	315.7	2.1
10°-20°	866.6	5.8
20°-30°	1216.7	8.1
30°-40°	1326.3	8.8
40°-50°	1219.0	8.1
50°-60°	957.3	6.4
60°-70°	623.1	4.2
70°-80°	320.8	2.1
80°-90°	86.7	0.6
90°-100°	90.7	0.6
100°-110°	338.1	2.3
110°-120°	896.7	6.0
120°-130°	1487.3	9.9
130°-140°	1579.8	10.5
140°-150°	1468.3	9.8
150°-160°	1180.4	7.9
160°-170°	760.6	5.1
170°-180°	261.8	1.7
0°-30°	2399.0	16.0
0°-40°	3725.3	24.8
0°-60°	5901.7	39.4
0°-90°	6932.3	46.2
90°-120°	1325.5	8.8
90°-150°	5860.8	39.1
90°-180°	8064.0	53.8
0°-180°	14996.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3368	3368	3368	3368	3368	
5°	3368	3353	3313	3341	3332	319
15°	3204	3170	3067	3009	2978	903
25°	2908	2810	2609	2484	2439	1337
35°	2506	2350	2082	1890	1823	1568
45°	2048	1844	1524	1308	1234	1582
55°	1558	1320	991	808	750	1392
65°	1052	805	530	427	418	1043
75°	561	347	244	222	220	593
85°	131	67	58	58	58	150
90°	2	24	40	50	54	14
95°	129	64	78	88	86	153
105°	605	665	122	143	151	646
115°	1144	1178	1228	306	163	1127
125°	1618	1644	1682	1696	1702	1443
135°	2002	2034	2052	2072	2068	1547
145°	2323	2321	2354	2368	2358	1453
155°	2558	2540	2564	2575	2560	1178
165°	2695	2683	2689	2703	2689	761
175°	2756	2742	2746	2760	2741	262
180°	2750	2750	2750	2750	2750	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3368.4	3368.4	3368.4	3368.4	3368.4
2.5°	3383.6	3368.4	3334.7	3365.5	3359.3
5°	3368.4	3353.2	3313.4	3340.9	3331.8
7.5°	3340.9	3322.8	3280.0	3292.0	3276.9
10°	3304.3	3283.0	3222.2	3212.8	3194.7
12.5°	3258.8	3231.2	3148.8	3130.7	3097.0
15°	3203.8	3170.1	3066.6	3008.7	2978.3
17.5°	3139.7	3090.9	2962.9	2895.9	2847.0
20°	3066.6	3005.5	2853.2	2777.2	2709.9
22.5°	2987.4	2917.2	2740.3	2636.9	2591.2
25°	2908.2	2810.5	2609.3	2484.4	2438.6
27.5°	2813.7	2709.9	2487.4	2344.1	2273.9
30°	2713.1	2597.0	2353.1	2198.0	2115.5
32.5°	2615.5	2475.1	2225.4	2042.4	1966.0
35°	2505.8	2350.3	2082.2	1890.1	1822.7
37.5°	2399.1	2231.2	1947.9	1737.4	1661.4
40°	2286.2	2103.5	1807.6	1591.2	1512.0
42.5°	2170.4	1975.4	1667.6	1441.8	1365.8
45°	2048.5	1844.1	1524.3	1307.6	1234.5
47.5°	1932.8	1716.4	1387.1	1170.4	1103.5
50°	1804.7	1588.3	1252.9	1042.4	978.7
52.5°	1679.5	1450.9	1124.9	923.6	865.8
55°	1557.5	1319.9	990.6	807.9	750.0
57.5°	1432.8	1188.8	872.0	701.1	652.3
60°	1304.7	1060.8	746.8	591.5	542.7
62.5°	1179.8	935.9	640.0	493.9	469.6
65°	1051.8	804.6	530.4	426.9	417.5
67.5°	929.8	682.7	426.9	374.8	365.8
70°	801.7	564.1	353.5	323.1	310.8
72.5°	679.8	454.0	295.6	271.3	265.2
75°	560.8	347.4	243.8	222.5	219.6
77.5°	442.1	246.8	192.1	179.8	173.7
80°	332.1	176.9	146.2	134.2	134.2
82.5°	231.5	119.0	100.6	94.5	94.5
85°	131.0	66.9	57.9	57.9	57.9
87.5°	48.8	24.3	24.3	21.4	21.4
90°	1.9	23.9	39.7	49.9	53.6
92.5°	49.9	41.8	47.8	51.8	53.6
95°	129.3	63.6	77.5	87.7	85.6
97.5°	232.8	69.7	101.4	107.5	109.5
100°	352.4	79.6	113.4	129.3	133.3
102.5°	483.5	479.8	117.4	139.2	145.3
105°	605.1	664.8	121.5	143.2	151.3
107.5°	746.4	796.0	125.5	147.3	155.3
110°	881.7	923.4	348.3	149.4	157.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1009.1	1044.8	1011.1	153.1	159.3
115°	1144.3	1178.2	1228.0	306.5	163.3
117.5°	1261.8	1301.6	1335.5	1050.8	529.4
120°	1393.2	1423.0	1458.9	1482.8	1214.1
122.5°	1504.6	1536.4	1576.4	1588.2	1590.3
125°	1618.0	1644.0	1681.8	1695.8	1701.6
127.5°	1721.5	1749.4	1779.4	1799.3	1801.2
130°	1819.1	1851.0	1872.8	1894.7	1892.8
132.5°	1918.6	1944.6	1966.4	1984.3	1982.4
135°	2002.3	2034.2	2051.9	2072.0	2068.0
137.5°	2089.7	2113.6	2133.7	2153.6	2147.6
140°	2175.2	2191.4	2213.1	2231.1	2221.1
142.5°	2247.1	2261.1	2286.8	2302.6	2292.8
145°	2322.8	2320.6	2354.5	2368.4	2358.4
147.5°	2388.2	2382.3	2416.1	2426.0	2418.3
150°	2452.0	2438.1	2470.0	2481.8	2471.9
152.5°	2505.6	2489.8	2519.7	2531.6	2517.7
155°	2557.5	2539.7	2563.6	2575.4	2559.6
157.5°	2599.3	2583.5	2601.4	2615.3	2599.3
160°	2635.2	2623.2	2635.2	2647.0	2633.1
162.5°	2666.8	2655.0	2665.0	2678.9	2661.0
165°	2694.7	2682.9	2688.8	2702.8	2688.8
167.5°	2716.7	2704.7	2710.9	2724.8	2706.8
170°	2734.7	2722.7	2726.7	2740.6	2722.7
172.5°	2746.5	2734.7	2738.7	2752.7	2734.7
175°	2756.4	2742.5	2746.5	2760.5	2740.6
177.5°	2760.5	2746.5	2748.7	2762.6	2744.6
180°	2750.5	2750.5	2750.5	2750.5	2750.5

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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	9.97	10.77	10.97	11.78	13.10	5.95	6.75	6.94	7.75	9.08
	3H	11.65	12.37	12.66	13.38	14.73	7.14	7.85	8.14	8.86	10.21
	4H	12.26	12.94	13.28	13.95	15.31	7.59	8.26	8.60	9.28	10.63
	6H	12.68	13.30	13.71	14.32	15.69	7.91	8.53	8.94	9.55	10.92
	8H	12.81	13.40	13.84	14.43	15.80	8.00	8.59	9.03	9.63	10.99
	12H	12.87	13.43	13.91	14.46	15.85	8.04	8.60	9.08	9.63	11.02
4H	2H	9.99	10.67	11.01	11.68	13.04	6.54	7.22	7.56	8.23	9.59
	3H	11.82	12.38	12.85	13.42	14.79	7.89	8.45	8.92	9.49	10.86
	4H	12.51	13.02	13.55	14.06	15.45	8.44	8.95	9.48	9.99	11.38
	6H	13.02	13.47	14.07	14.52	15.91	8.86	9.30	9.91	10.36	11.74
	8H	13.20	13.61	14.25	14.66	16.06	8.99	9.40	10.04	10.45	11.85
	12H	13.29	13.67	14.36	14.73	16.14	9.05	9.42	10.12	10.49	11.90
8H	4H	12.48	12.89	13.53	13.94	15.34	8.72	9.13	9.77	10.18	11.58
	6H	13.04	13.38	14.12	14.47	15.87	9.24	9.58	10.31	10.67	12.07
	8H	13.26	13.56	14.34	14.63	16.05	9.43	9.73	10.51	10.80	12.22
	12H	13.40	13.66	14.48	14.73	16.19	9.55	9.81	10.63	10.88	12.34
12H	4H	12.43	12.80	13.49	13.86	15.27	8.72	9.09	9.79	10.16	11.56
	6H	13.02	13.32	14.10	14.39	15.81	9.29	9.58	10.37	10.66	12.08
	8H	13.24	13.50	14.32	14.57	16.03	9.50	9.76	10.58	10.83	12.29

END OF REPORT