

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: P927674

Luminaire Tested: DFN2DIP-HX4F0-080D060US840-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927674
REPORT IS A COMBINATION OF REPORTS P900864 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-080D060US840-RLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

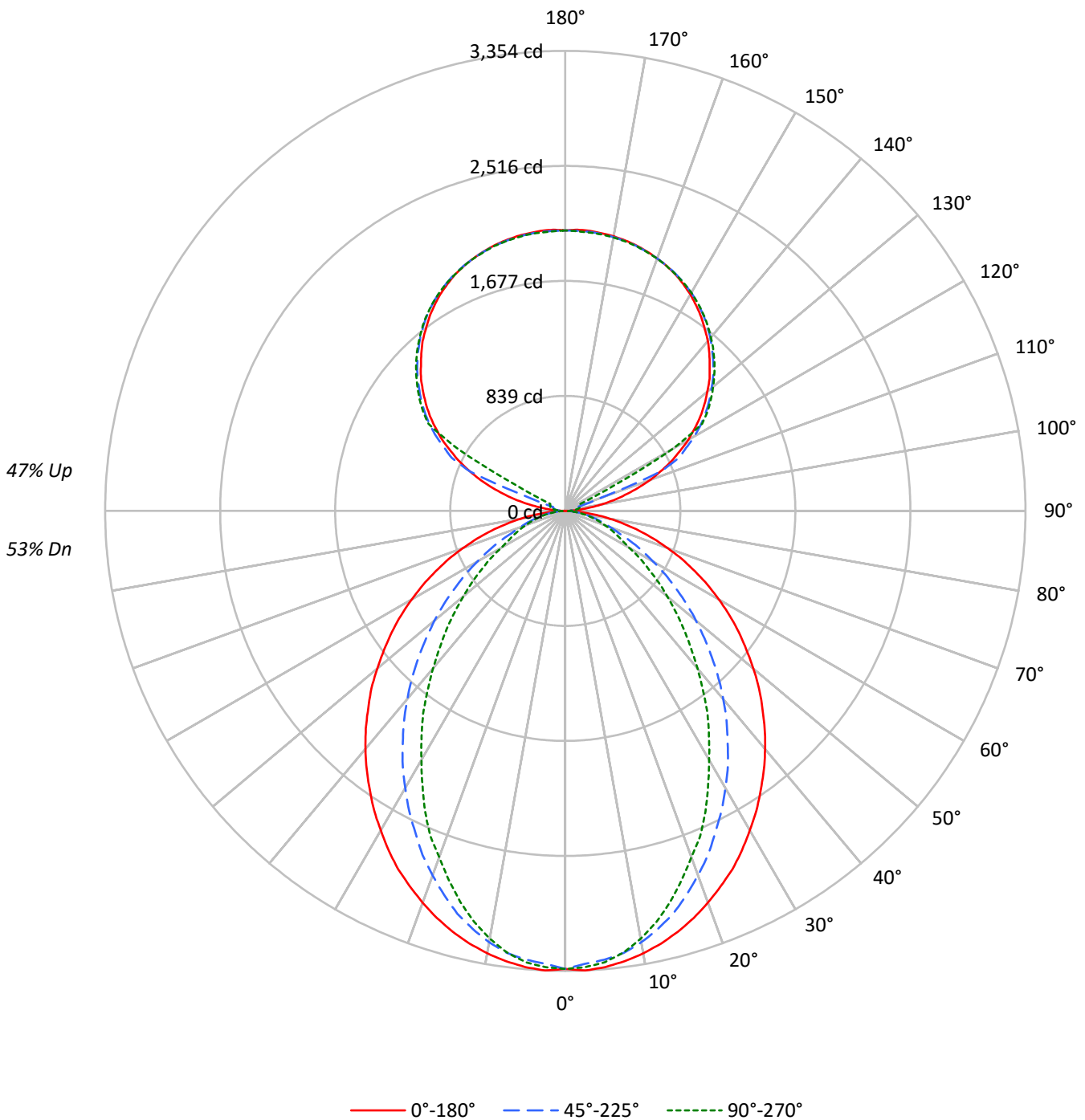
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12864.8 lumens
Efficiency: N/A
Efficacy: 106.6 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): 120.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59	53	53	53	53
1	99	95	91	88	92	88	85	82	76	73	71	64	62	61	53	52	51	46	46	46	46
2	91	83	78	73	84	78	73	68	67	63	60	57	54	52	47	45	44	39	39	39	39
3	83	74	67	61	77	69	63	58	59	55	51	51	47	44	42	40	38	34	34	34	34
4	76	66	58	52	70	61	55	49	53	48	44	45	42	38	38	35	33	30	30	30	30
5	70	59	51	45	65	55	48	43	48	42	38	41	37	34	35	32	29	26	26	26	26
6	65	53	45	39	60	50	43	37	43	38	34	37	33	30	32	28	26	23	23	23	23
7	60	48	40	35	56	45	38	33	39	34	30	34	30	26	29	26	23	21	21	21	21
8	56	44	36	31	52	41	34	29	36	31	27	31	27	24	27	24	21	19	19	19	19
9	52	40	33	28	48	38	31	26	33	28	24	29	25	22	25	22	19	17	17	17	17
10	49	37	30	25	45	35	28	24	31	25	22	27	23	20	23	20	17	16	16	16	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2483	2483	2483
5°	2487	2443	2459
10°	2462	2396	2379
15°	2429	2317	2256
20°	2384	2208	2104
25°	2338	2086	1957
30°	2277	1960	1771
35°	2217	1826	1608
40°	2155	1686	1421
45°	2084	1532	1251
50°	2011	1376	1086
55°	1934	1209	926
60°	1845	1034	763
65°	1743	856	686
70°	1619	691	622
75°	1463	610	566
80°	1238	512	491
85°	866	343	370

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2084 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	312.9	2.4
10°-20°	859.0	6.7
20°-30°	1206.0	9.4
30°-40°	1314.6	10.2
40°-50°	1208.3	9.4
50°-60°	948.9	7.4
60°-70°	617.7	4.8
70°-80°	318.0	2.5
80°-90°	84.8	0.7
90°-100°	67.4	0.5
100°-110°	251.3	2.0
110°-120°	666.6	5.2
120°-130°	1105.6	8.6
130°-140°	1174.4	9.1
140°-150°	1091.5	8.5
150°-160°	877.5	6.8
160°-170°	565.5	4.4
170°-180°	194.6	1.5
0°-30°	2378.0	18.5
0°-40°	3692.6	28.7
0°-60°	5849.9	45.5
0°-90°	6870.2	53.4
90°-120°	985.4	7.7
90°-150°	4357.0	33.9
90°-180°	5995.0	46.6
0°-180°	12864.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3339	3339	3339	3339	3339	
5°	3339	3324	3284	3312	3303	317
15°	3176	3142	3040	2982	2952	895
25°	2883	2786	2586	2463	2417	1326
35°	2484	2330	2064	1874	1807	1555
45°	2030	1828	1511	1296	1224	1568
55°	1544	1308	982	801	743	1380
65°	1042	798	526	423	414	1033
75°	556	344	242	220	218	588
85°	130	66	57	57	57	149
90°	1	18	30	37	40	12
95°	96	47	58	65	64	114
105°	450	494	90	106	112	481
115°	851	876	913	228	121	838
125°	1203	1222	1250	1261	1265	1073
135°	1488	1512	1525	1540	1537	1150
145°	1727	1725	1750	1761	1753	1080
155°	1901	1888	1906	1915	1903	876
165°	2003	1995	1999	2009	1999	566
175°	2049	2039	2042	2052	2037	195
180°	2045	2045	2045	2045	2045	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3338.8	3338.8	3338.8	3338.8	3338.8
2.5°	3353.8	3338.8	3305.5	3335.9	3329.8
5°	3338.8	3323.8	3284.3	3311.5	3302.6
7.5°	3311.5	3293.6	3251.3	3263.2	3248.0
10°	3275.3	3254.2	3193.9	3184.6	3166.6
12.5°	3230.1	3202.9	3121.1	3103.1	3069.8
15°	3175.6	3142.3	3039.7	2982.3	2952.2
17.5°	3112.1	3063.7	2936.8	2870.5	2822.0
20°	3039.7	2979.1	2828.1	2752.8	2686.1
22.5°	2961.1	2891.6	2716.3	2613.7	2568.4
25°	2882.6	2785.8	2586.4	2462.7	2417.2
27.5°	2789.0	2686.1	2465.5	2323.5	2254.0
30°	2689.3	2574.2	2332.5	2178.6	2096.8
32.5°	2592.5	2453.4	2205.9	2024.4	1948.8
35°	2483.8	2329.6	2063.8	1873.5	1806.7
37.5°	2378.0	2211.7	1930.8	1722.1	1646.8
40°	2266.2	2085.0	1791.7	1577.2	1498.6
42.5°	2151.4	1958.1	1652.8	1429.2	1353.7
45°	2030.5	1827.9	1510.9	1296.1	1223.7
47.5°	1915.8	1701.3	1374.9	1160.2	1093.8
50°	1788.8	1574.4	1242.0	1033.2	970.0
52.5°	1664.8	1438.1	1114.9	915.6	858.2
55°	1543.9	1308.3	981.9	800.8	743.4
57.5°	1420.2	1178.4	864.3	695.0	646.6
60°	1293.1	1051.5	740.2	586.3	537.9
62.5°	1169.4	927.7	634.5	489.6	465.5
65°	1042.5	797.5	525.7	423.2	413.8
67.5°	921.6	676.8	423.2	371.5	362.6
70°	794.7	559.1	350.4	320.2	308.1
72.5°	673.8	450.1	293.0	269.0	262.9
75°	555.9	344.3	241.7	220.5	217.7
77.5°	438.3	244.6	190.4	178.2	172.2
80°	329.2	175.4	144.9	133.0	133.0
82.5°	229.5	117.9	99.7	93.6	93.6
85°	129.9	66.3	57.4	57.4	57.4
87.5°	48.4	24.0	24.0	21.2	21.2
90°	1.4	17.8	29.5	37.1	39.9
92.5°	37.1	31.1	35.4	38.5	39.9
95°	96.1	47.3	57.7	65.2	63.6
97.5°	173.1	51.8	75.3	80.0	81.4
100°	261.9	59.2	84.3	96.1	99.1
102.5°	359.5	356.7	87.3	103.5	108.0
105°	449.8	494.2	90.3	106.4	112.5
107.5°	554.9	591.7	93.3	109.5	115.4
110°	655.6	686.5	259.0	111.1	116.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	750.2	776.7	751.6	113.8	118.4
115°	850.8	875.9	913.0	227.9	121.4
117.5°	938.0	967.6	992.8	781.2	393.5
120°	1035.8	1057.9	1084.6	1102.3	902.6
122.5°	1118.5	1142.2	1171.9	1180.7	1182.3
125°	1202.9	1222.2	1250.2	1260.6	1265.0
127.5°	1279.8	1300.5	1322.8	1337.6	1339.0
130°	1352.3	1376.1	1392.2	1408.6	1407.2
132.5°	1426.3	1445.6	1461.8	1475.1	1473.7
135°	1488.5	1512.3	1525.4	1540.3	1537.3
137.5°	1553.5	1571.2	1586.2	1600.9	1596.6
140°	1617.1	1629.1	1645.3	1658.6	1651.2
142.5°	1670.5	1680.9	1700.1	1711.8	1704.4
145°	1726.8	1725.1	1750.3	1760.7	1753.3
147.5°	1775.4	1771.0	1796.1	1803.5	1797.7
150°	1822.9	1812.5	1836.2	1845.0	1837.6
152.5°	1862.8	1851.0	1873.1	1882.1	1871.7
155°	1901.3	1888.0	1905.8	1914.6	1902.8
157.5°	1932.4	1920.5	1933.9	1944.3	1932.4
160°	1959.0	1950.0	1959.0	1967.8	1957.5
162.5°	1982.5	1973.8	1981.1	1991.5	1978.2
165°	2003.3	1994.6	1998.9	2009.3	1998.9
167.5°	2019.6	2010.7	2015.3	2025.7	2012.2
170°	2033.0	2024.0	2027.1	2037.4	2024.0
172.5°	2041.8	2033.0	2036.0	2046.4	2033.0
175°	2049.2	2038.8	2041.8	2052.1	2037.4
177.5°	2052.1	2041.8	2043.3	2053.7	2040.4
180°	2044.7	2044.7	2044.7	2044.7	2044.7



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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	10.62	11.48	11.55	12.43	13.65	6.59	7.45	7.53	8.40	9.62
	3H	12.30	13.07	13.25	14.02	15.27	7.79	8.55	8.73	9.51	10.76
	4H	12.91	13.64	13.87	14.60	15.85	8.24	8.96	9.20	9.92	11.18
	6H	13.33	14.00	14.31	14.97	16.24	8.56	9.23	9.53	10.20	11.47
	8H	13.46	14.10	14.44	15.08	16.35	8.65	9.29	9.63	10.27	11.54
	12H	13.53	14.13	14.51	15.11	16.40	8.70	9.30	9.68	10.28	11.57
4H	2H	10.64	11.37	11.61	12.33	13.59	7.19	7.92	8.16	8.88	10.14
	3H	12.48	13.08	13.45	14.07	15.34	8.55	9.15	9.52	10.14	11.41
	4H	13.17	13.72	14.15	14.70	16.00	9.10	9.65	10.08	10.63	11.93
	6H	13.69	14.16	14.68	15.17	16.46	9.52	9.99	10.52	11.00	12.29
	8H	13.86	14.30	14.86	15.31	16.61	9.65	10.09	10.65	11.09	12.40
	12H	13.96	14.36	14.98	15.37	16.69	9.72	10.12	10.73	11.13	12.45
8H	4H	13.14	13.58	14.14	14.58	15.89	9.38	9.82	10.38	10.82	12.13
	6H	13.71	14.07	14.73	15.12	16.42	9.90	10.27	10.92	11.31	12.61
	8H	13.93	14.25	14.96	15.28	16.60	10.09	10.42	11.13	11.45	12.77
	12H	14.07	14.35	15.10	15.37	16.74	10.22	10.50	11.25	11.52	12.89
12H	4H	13.09	13.49	14.11	14.51	15.82	9.39	9.78	10.40	10.80	12.11
	6H	13.68	14.00	14.71	15.03	16.36	9.95	10.27	10.98	11.30	12.63
	8H	13.91	14.19	14.94	15.21	16.58	10.17	10.45	11.20	11.47	12.84