

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: P927682

Luminaire Tested: DFN2DIP-HX4F0-080D080US840-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927682
REPORT IS A COMBINATION OF REPORTS P900900 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-080D080US840-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

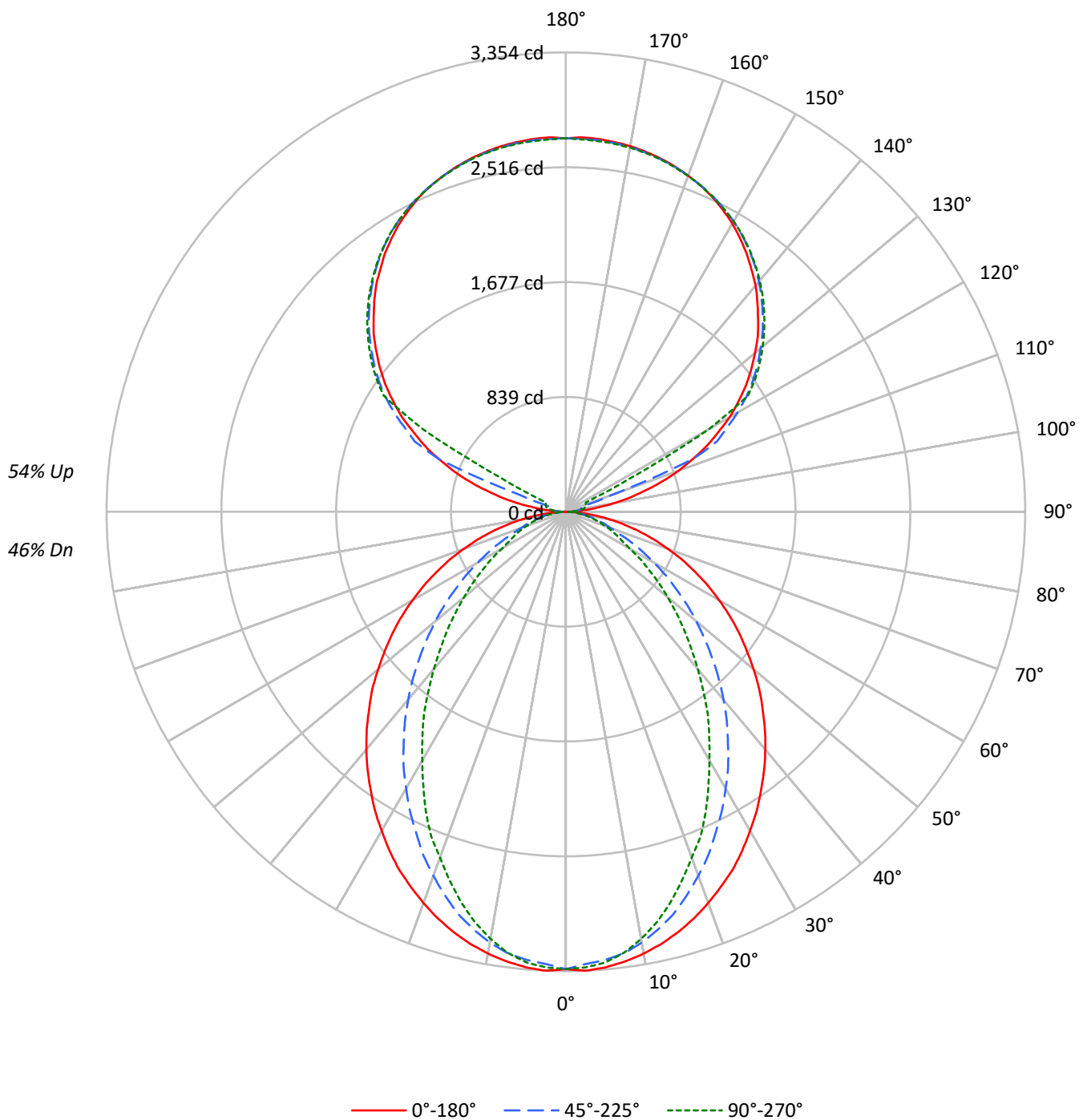
Lumens per Lamp: N/A
Luminaire Lumens: 14864.3 lumens
Efficiency: N/A
Efficacy: 110.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 135
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

TEST NUMBER: P927682

CATALOG NUMBER: DFN2DIP-HX4F0-080D080US840-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P927682

CATALOG NUMBER: DFN2DIP-HX4F0-080D080US840-RLLONL

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°	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

TEST NUMBER: P927682

CATALOG NUMBER: DFN2DIP-HX4F0-080D080US840-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	312.9	2.1
10°-20°	859.0	5.8
20°-30°	1206.0	8.1
30°-40°	1314.6	8.8
40°-50°	1208.3	8.1
50°-60°	948.9	6.4
60°-70°	617.7	4.2
70°-80°	318.0	2.1
80°-90°	86.0	0.6
90°-100°	89.9	0.6
100°-110°	335.1	2.3
110°-120°	888.8	6.0
120°-130°	1474.2	9.9
130°-140°	1565.9	10.5
140°-150°	1455.3	9.8
150°-160°	1170.1	7.9
160°-170°	754.0	5.1
170°-180°	259.5	1.7
0°-30°	2378.0	16.0
0°-40°	3692.6	24.8
0°-60°	5849.9	39.4
0°-90°	6871.4	46.2
90°-120°	1313.9	8.8
90°-150°	5809.3	39.1
90°-180°	7993.0	53.8
0°-180°	14864.3	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°	2	24	39	49	53	14
95°	128	63	77	87	85	152
105°	600	659	120	142	150	641
115°	1134	1168	1217	304	162	1117
125°	1604	1630	1667	1681	1687	1430
135°	1985	2016	2034	2054	2050	1533
145°	2302	2300	2334	2348	2338	1440
155°	2535	2517	2541	2553	2537	1168
165°	2671	2659	2665	2679	2665	755
175°	2732	2718	2722	2736	2717	260
180°	2726	2726	2726	2726	2726	

TEST NUMBER: P927682

CATALOG NUMBER: DFN2DIP-HX4F0-080D080US840-RLLONL

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°	1.9	23.6	39.4	49.4	53.2
92.5°	49.4	41.5	47.4	51.3	53.2
95°	128.1	63.0	76.8	86.9	84.8
97.5°	230.7	69.1	100.5	106.6	108.5
100°	349.3	79.0	112.5	128.1	132.1
102.5°	479.4	475.5	116.4	137.9	144.1
105°	599.7	659.0	120.4	142.0	150.0
107.5°	739.8	789.0	124.4	145.9	153.9
110°	874.1	915.3	345.4	148.0	155.8



TEST NUMBER: P927682

CATALOG NUMBER: DFN2DIP-HX4F0-080D080US840-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1000.3	1035.7	1002.2	151.8	157.9
115°	1134.3	1167.8	1217.2	303.8	161.9
117.5°	1250.7	1290.1	1323.8	1041.5	524.8
120°	1381.0	1410.5	1446.1	1469.8	1203.4
122.5°	1491.3	1523.0	1562.6	1574.3	1576.4
125°	1603.8	1629.5	1667.0	1680.8	1686.7
127.5°	1706.4	1734.0	1763.8	1783.4	1785.3
130°	1803.1	1834.7	1856.3	1878.1	1876.2
132.5°	1901.8	1927.5	1949.1	1966.9	1965.0
135°	1984.7	2016.3	2033.8	2053.8	2049.8
137.5°	2071.4	2095.0	2114.9	2134.6	2128.8
140°	2156.1	2172.1	2193.7	2211.5	2201.6
142.5°	2227.4	2241.2	2266.7	2282.5	2272.6
145°	2302.3	2300.2	2333.7	2347.6	2337.7
147.5°	2367.3	2361.4	2394.8	2404.7	2397.0
150°	2430.5	2416.7	2448.3	2460.0	2450.2
152.5°	2483.7	2468.0	2497.4	2509.5	2495.6
155°	2535.0	2517.4	2541.1	2552.8	2537.1
157.5°	2576.4	2560.8	2578.5	2592.4	2576.4
160°	2612.0	2600.1	2612.0	2623.8	2609.9
162.5°	2643.5	2631.7	2641.5	2655.4	2637.6
165°	2671.1	2659.4	2665.3	2679.0	2665.3
167.5°	2692.8	2680.9	2687.0	2700.8	2683.0
170°	2710.7	2698.7	2702.7	2716.6	2698.7
172.5°	2722.4	2710.7	2714.6	2728.5	2710.7
175°	2732.2	2718.4	2722.4	2736.2	2716.6
177.5°	2736.2	2722.4	2724.4	2738.3	2720.5
180°	2726.4	2726.4	2726.4	2726.4	2726.4

TEST NUMBER: P927682

CATALOG NUMBER: DFN2DIP-HX4F0-080D080US840-RLONL

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	9.94	10.74	10.94	11.75	13.07	5.92	6.72	6.91	7.72	9.05
	3H	11.62	12.34	12.63	13.35	14.70	7.11	7.82	8.11	8.83	10.18
	4H	12.23	12.90	13.25	13.92	15.28	7.56	8.23	8.57	9.25	10.60
	6H	12.65	13.27	13.68	14.29	15.66	7.88	8.50	8.91	9.52	10.89
	8H	12.78	13.37	13.81	14.40	15.77	7.97	8.56	9.00	9.59	10.96
	12H	12.84	13.40	13.88	14.43	15.82	8.01	8.57	9.05	9.60	10.99
4H	2H	9.96	10.64	10.98	11.65	13.01	6.51	7.19	7.53	8.20	9.56
	3H	11.79	12.35	12.82	13.39	14.76	7.86	8.42	8.89	9.46	10.83
	4H	12.48	12.99	13.52	14.03	15.42	8.41	8.92	9.45	9.96	11.35
	6H	12.99	13.43	14.04	14.49	15.88	8.83	9.27	9.88	10.33	11.71
	8H	13.17	13.58	14.22	14.63	16.03	8.96	9.37	10.01	10.42	11.82
	12H	13.26	13.63	14.33	14.70	16.11	9.02	9.39	10.09	10.46	11.87
8H	4H	12.44	12.86	13.50	13.91	15.31	8.69	9.10	9.74	10.15	11.55
	6H	13.01	13.35	14.08	14.44	15.84	9.21	9.55	10.28	10.64	12.04
	8H	13.23	13.53	14.31	14.60	16.02	9.40	9.70	10.48	10.77	12.19
	12H	13.37	13.63	14.45	14.70	16.16	9.52	9.78	10.60	10.85	12.31
12H	4H	12.40	12.77	13.46	13.83	15.24	8.69	9.06	9.76	10.13	11.53
	6H	12.99	13.29	14.07	14.36	15.78	9.25	9.55	10.34	10.63	12.05
	8H	13.21	13.47	14.29	14.54	16.00	9.47	9.73	10.55	10.80	12.26

END OF REPORT