

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: P910840

Luminaire Tested: DFN2DIP-HX3F0-080D070US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910840
REPORT IS A COMBINATION OF REPORTS P899268 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-080D070US850-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

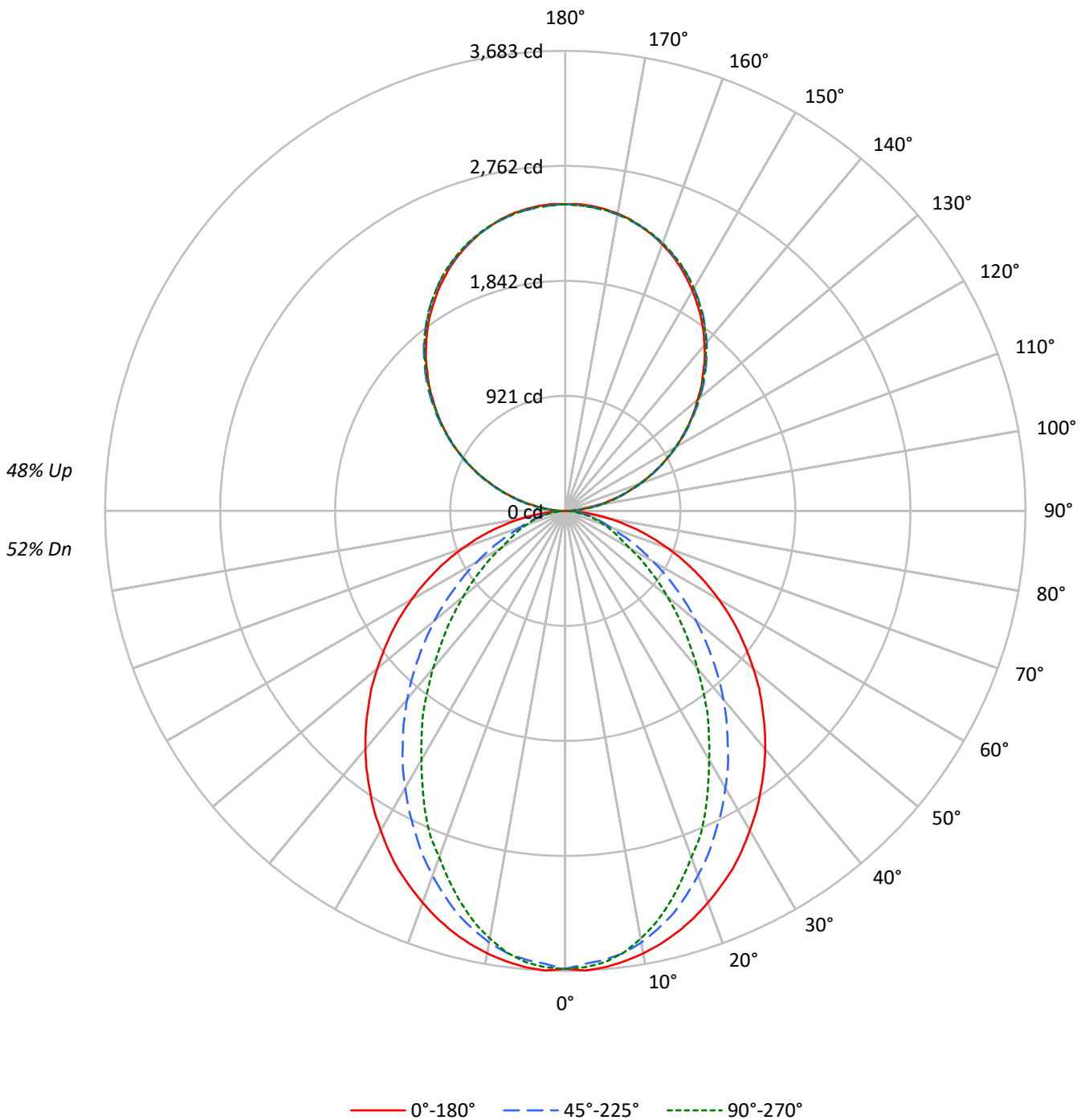
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14411.5 lumens
Efficiency: N/A
Efficacy: 108.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 133.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P910840
CATALOG NUMBER: DFN2DIP-HX3F0-080D070US850-RLFL

Luminous Intensity Polar Plot





TEST NUMBER: P910840

CATALOG NUMBER: DFN2DIP-HX3F0-080D070US850-RLLFLL

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	0
RCR																		
0	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52
1	99	95	91	88	91	88	85	82	75	73	71	63	62	60	52	51	50	45
2	90	83	77	72	83	77	72	68	66	63	59	56	53	51	47	45	43	39
3	83	74	67	61	76	69	62	57	59	54	50	50	47	44	42	39	37	33
4	76	66	58	52	70	61	54	49	53	48	43	45	41	38	38	35	33	29
5	70	59	51	45	65	55	48	43	47	42	38	41	36	33	34	31	29	26
6	65	53	45	39	60	49	42	37	43	37	33	37	33	29	31	28	25	23
7	60	48	40	35	55	45	38	33	39	34	30	34	29	26	29	25	23	20
8	56	44	36	31	52	41	34	29	36	30	26	31	27	23	26	23	21	18
9	52	40	33	28	48	38	31	26	33	28	24	29	24	21	24	21	19	17
10	49	37	30	25	45	35	28	24	30	25	22	26	22	19	23	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4247	4247	4247
5°	4252	4177	4204
10°	4208	4092	4065
15°	4148	3954	3852
20°	4070	3765	3590
25°	3989	3553	3338
30°	3882	3337	3019
35°	3777	3104	2738
40°	3669	2864	2417
45°	3545	2597	2127
50°	3416	2329	1842
55°	3281	2042	1570
60°	3125	1743	1290
65°	2945	1439	1158
70°	2727	1156	1045
75°	2453	1012	946
80°	2056	840	812
85°	1405	547	597

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3545 cd/sqm



TEST NUMBER: P910840

CATALOG NUMBER: DFN2DIP-HX3F0-080D070US850-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	343.7	2.4
10°-20°	943.4	6.5
20°-30°	1324.5	9.2
30°-40°	1443.8	10.0
40°-50°	1327.0	9.2
50°-60°	1042.1	7.2
60°-70°	678.3	4.7
70°-80°	349.2	2.4
80°-90°	96.1	0.7
90°-100°	151.9	1.1
100°-110°	482.7	3.3
110°-120°	826.1	5.7
120°-130°	1086.4	7.5
130°-140°	1219.5	8.5
140°-150°	1195.8	8.3
150°-160°	1003.1	7.0
160°-170°	665.3	4.6
170°-180°	232.5	1.6
0°-30°	2611.6	18.1
0°-40°	4055.4	28.1
0°-60°	6424.5	44.6
0°-90°	7548.2	52.4
90°-120°	1460.7	10.1
90°-150°	4962.4	34.4
90°-180°	6863.0	47.6
0°-180°	14411.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3667	3667	3667	3667	3667	
5°	3667	3650	3607	3637	3627	348
15°	3488	3451	3338	3275	3242	983
25°	3166	3060	2840	2705	2655	1456
35°	2728	2558	2267	2058	1984	1707
45°	2230	2008	1659	1423	1344	1722
55°	1696	1437	1078	879	816	1515
65°	1145	876	577	465	454	1135
75°	610	378	266	242	239	646
85°	143	73	63	63	63	164
90°	2	27	72	68	70	14
95°	108	129	132	132	129	120
105°	446	452	456	460	460	470
115°	829	841	837	835	829	820
125°	1206	1224	1218	1212	1210	1077
135°	1560	1582	1587	1585	1579	1205
145°	1893	1908	1920	1922	1914	1183
155°	2165	2171	2178	2188	2181	997
165°	2355	2353	2353	2368	2357	664
175°	2451	2445	2440	2455	2443	233
180°	2455	2455	2455	2455	2455	



TEST NUMBER: P910840

CATALOG NUMBER: DFN2DIP-HX3F0-080D070US850-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3666.8	3666.8	3666.8	3666.8	3666.8
2.5°	3683.3	3666.8	3630.2	3663.6	3656.9
5°	3666.8	3650.3	3606.9	3636.9	3627.0
7.5°	3636.9	3617.1	3570.6	3583.7	3567.1
10°	3597.0	3573.9	3507.7	3497.5	3477.7
12.5°	3547.5	3517.5	3427.7	3408.0	3371.4
15°	3487.6	3451.0	3338.3	3275.3	3242.2
17.5°	3417.8	3364.7	3225.3	3152.4	3099.2
20°	3338.3	3271.8	3106.0	3023.2	2949.9
22.5°	3252.0	3175.6	2983.1	2870.4	2820.7
25°	3165.8	3059.5	2840.5	2704.6	2654.6
27.5°	3062.9	2949.9	2707.7	2551.8	2475.4
30°	2953.5	2827.1	2561.7	2392.7	2302.8
32.5°	2847.1	2694.4	2422.6	2223.3	2140.3
35°	2727.8	2558.5	2266.6	2057.5	1984.2
37.5°	2611.6	2428.9	2120.5	1891.3	1808.6
40°	2488.8	2289.9	1967.7	1732.1	1645.9
42.5°	2362.7	2150.5	1815.2	1569.6	1486.7
45°	2230.0	2007.5	1659.3	1423.4	1343.9
47.5°	2104.0	1868.4	1510.0	1274.1	1201.3
50°	1964.5	1729.0	1364.0	1134.7	1065.3
52.5°	1828.3	1579.3	1224.4	1005.5	942.5
55°	1695.6	1436.8	1078.4	879.4	816.4
57.5°	1559.7	1294.2	949.2	763.3	710.1
60°	1420.2	1154.8	812.9	643.9	590.8
62.5°	1284.3	1018.8	696.8	537.6	511.2
65°	1144.9	875.9	577.3	464.8	454.5
67.5°	1012.2	743.3	464.8	408.0	398.2
70°	872.8	614.1	384.8	351.7	338.4
72.5°	740.0	494.3	321.8	295.4	288.7
75°	610.5	378.2	265.5	242.2	239.1
77.5°	481.3	268.6	209.2	195.7	189.1
80°	361.5	192.6	159.1	146.1	146.1
82.5°	252.1	129.5	109.5	102.8	102.8
85°	142.6	72.9	63.0	63.0	63.0
87.5°	53.1	26.4	26.4	23.3	23.3
90°	2.2	26.6	72.5	68.1	70.3
92.5°	45.9	62.2	64.4	66.7	66.7
95°	108.0	128.8	132.5	132.5	128.8
97.5°	179.9	199.1	207.3	207.3	207.3
100°	262.7	279.8	285.7	285.7	283.5
102.5°	350.1	362.6	370.8	373.1	370.8
105°	445.6	451.5	455.9	459.7	459.7
107.5°	540.3	549.2	549.2	550.7	540.3
110°	632.1	644.0	644.0	644.0	638.0



TEST NUMBER: P910840

CATALOG NUMBER: DFN2DIP-HX3F0-080D070US850-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	731.3	743.9	741.7	735.7	731.3
115°	829.0	840.8	837.2	835.0	829.0
117.5°	925.9	942.2	931.9	925.9	920.0
120°	1023.6	1039.9	1023.6	1023.6	1017.0
122.5°	1112.4	1133.2	1122.9	1116.9	1112.4
125°	1205.7	1224.2	1218.3	1211.7	1209.5
127.5°	1296.8	1319.7	1311.6	1302.7	1296.8
130°	1381.9	1408.5	1404.9	1400.4	1392.2
132.5°	1477.4	1498.1	1499.6	1489.3	1483.3
135°	1559.6	1582.4	1587.0	1584.7	1578.8
137.5°	1651.3	1669.8	1673.5	1672.0	1663.2
140°	1732.0	1750.6	1760.9	1760.9	1752.8
142.5°	1814.9	1833.4	1839.3	1841.5	1833.4
145°	1893.4	1908.1	1920.0	1922.2	1914.1
147.5°	1963.7	1982.2	1991.1	1994.8	1986.7
150°	2036.2	2048.8	2057.0	2063.6	2057.0
152.5°	2100.6	2113.2	2123.5	2131.7	2123.5
155°	2165.0	2170.9	2177.6	2187.9	2181.3
157.5°	2220.6	2225.0	2228.6	2243.5	2233.1
160°	2270.1	2274.6	2276.8	2289.3	2280.4
162.5°	2316.0	2316.0	2318.3	2332.2	2321.9
165°	2355.2	2353.0	2353.0	2367.8	2357.4
167.5°	2390.8	2384.1	2384.1	2398.9	2388.6
170°	2417.4	2411.5	2409.3	2424.1	2411.5
172.5°	2435.9	2429.9	2427.7	2442.6	2429.9
175°	2450.7	2444.8	2440.4	2455.1	2442.6
177.5°	2458.9	2452.9	2448.5	2461.1	2448.5
180°	2455.1	2455.1	2455.1	2455.1	2455.1



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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	12.35	13.20	13.29	14.15	15.39	8.32	9.17	9.27	10.13	11.37
	3H	14.02	14.78	14.97	15.74	17.01	9.51	10.27	10.46	11.23	12.50
	4H	14.62	15.34	15.59	16.31	17.58	9.96	10.68	10.93	11.64	12.92
	6H	15.04	15.70	16.02	16.67	17.96	10.28	10.94	11.26	11.91	13.19
	8H	15.16	15.79	16.15	16.78	18.06	10.36	10.99	11.35	11.98	13.27
	12H	15.22	15.82	16.21	16.80	18.11	10.41	11.00	11.40	11.99	13.29
4H	2H	12.37	13.08	13.34	14.05	15.33	8.92	9.63	9.89	10.60	11.88
	3H	14.19	14.79	15.17	15.78	17.07	10.26	10.86	11.25	11.86	13.14
	4H	14.88	15.42	15.87	16.41	17.72	10.81	11.35	11.80	12.34	13.65
	6H	15.38	15.85	16.39	16.87	18.18	11.22	11.69	12.23	12.71	14.01
	8H	15.56	15.99	16.56	17.00	18.32	11.35	11.79	12.36	12.80	14.12
	12H	15.65	16.04	16.67	17.07	18.39	11.41	11.81	12.44	12.83	14.16
8H	4H	14.84	15.28	15.85	16.29	17.61	11.09	11.52	12.09	12.53	13.85
	6H	15.40	15.76	16.43	16.81	18.13	11.60	11.96	12.63	13.01	14.33
	8H	15.61	15.93	16.65	16.97	18.31	11.79	12.10	12.82	13.14	14.48
	12H	15.75	16.03	16.79	17.06	18.44	11.90	12.18	12.94	13.21	14.59
12H	4H	14.80	15.19	15.82	16.22	17.54	11.09	11.48	12.11	12.51	13.83
	6H	15.38	15.70	16.42	16.73	18.07	11.64	11.96	12.68	13.00	14.34
	8H	15.59	15.87	16.63	16.90	18.29	11.85	12.13	12.89	13.16	14.55