

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: P910794

Luminaire Tested: DFN2DIP-HX3F0-060D080US850-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910794
REPORT IS A COMBINATION OF REPORTS P899277 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-060D080US850-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

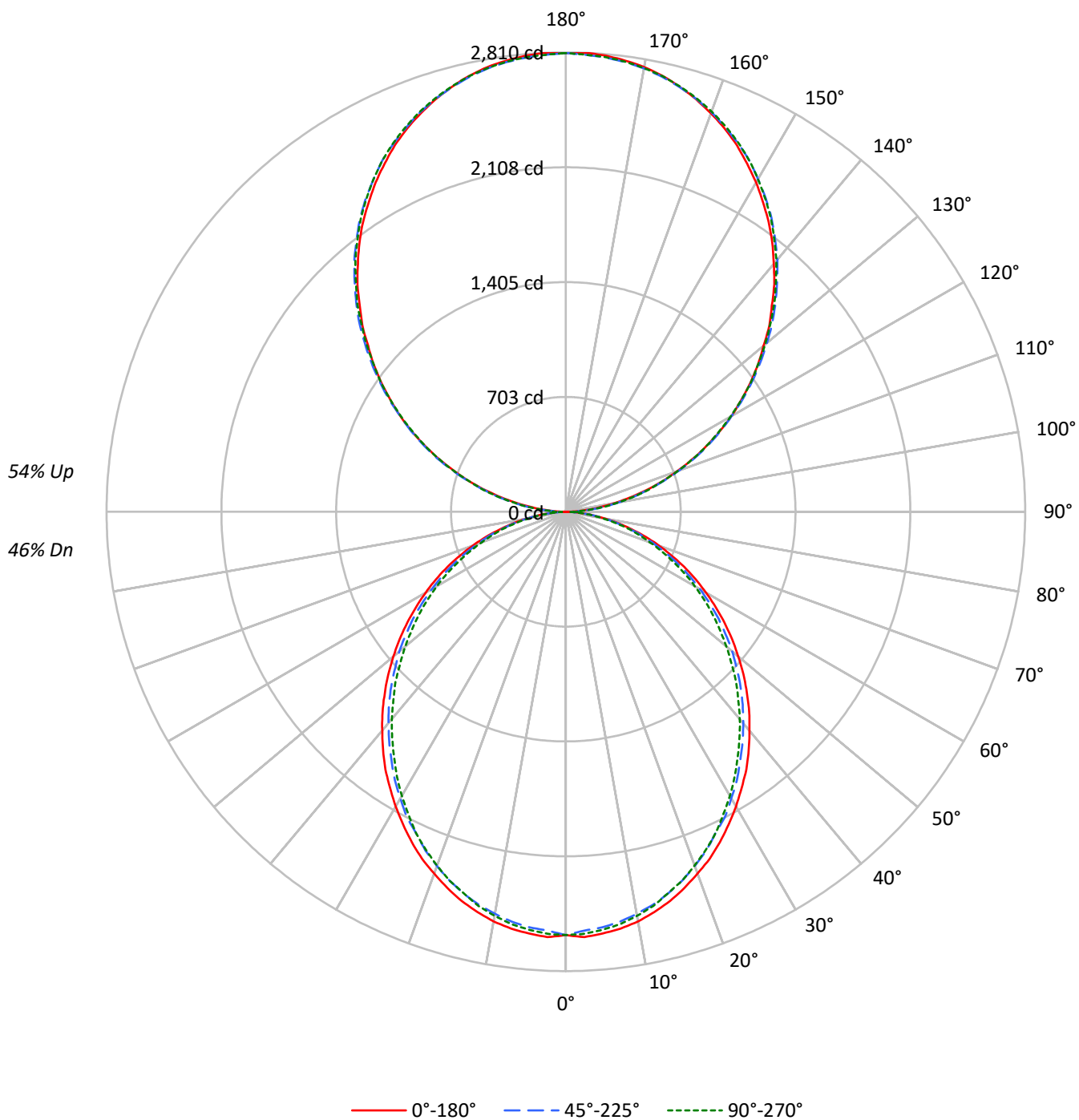
Lumens per Lamp: N/A
Luminaire Lumens: 14439.1 lumens
Efficiency: N/A
Efficacy: 122.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 118
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P910794

CATALOG NUMBER: DFN2DIP-HX3F0-060D080US850-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P910794

CATALOG NUMBER: DFN2DIP-HX3F0-060D080US850-FLLFL

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
RCR																	
0	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52
1	97	93	89	85	89	85	82	79	71	69	66	58	56	55	46	45	44
2	88	81	75	70	81	74	69	65	62	58	55	51	48	46	41	39	37
3	80	71	64	58	73	65	59	54	55	50	46	45	42	39	36	34	32
4	74	63	55	49	67	58	51	46	49	43	39	40	36	33	32	29	27
5	67	56	48	42	62	52	45	39	44	38	34	36	32	29	29	26	24
6	62	50	42	36	57	46	39	34	39	34	30	33	28	25	26	23	21
7	57	45	37	32	53	42	35	30	36	30	26	30	25	22	24	21	19
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	17
9	50	37	30	25	45	35	28	24	30	24	21	25	21	18	20	17	15
10	46	34	27	22	42	32	25	21	27	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2999	2999	2999
5°	3003	2955	2976
10°	2977	2913	2934
15°	2932	2863	2869
20°	2871	2795	2803
25°	2811	2713	2727
30°	2736	2637	2630
35°	2665	2547	2529
40°	2577	2456	2432
45°	2490	2365	2332
50°	2394	2270	2217
55°	2294	2159	2111
60°	2180	2029	1990
65°	2056	1893	1846
70°	1898	1727	1691
75°	1680	1528	1546
80°	1416	1274	1273
85°	1004	843	826

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2642 cd/sqm

TEST NUMBER: P910794

CATALOG NUMBER: DFN2DIP-HX3F0-060D080US850-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	243.7	1.7
10°-20°	685.6	4.7
20°-30°	1007.6	7.0
30°-40°	1170.3	8.1
40°-50°	1168.8	8.1
50°-60°	1019.2	7.1
60°-70°	753.4	5.2
70°-80°	426.3	3.0
80°-90°	120.5	0.8
90°-100°	173.6	1.2
100°-110°	551.7	3.8
110°-120°	944.1	6.5
120°-130°	1241.6	8.6
130°-140°	1393.7	9.7
140°-150°	1366.6	9.5
150°-160°	1146.4	7.9
160°-170°	760.3	5.3
170°-180°	265.7	1.8
0°-30°	1937.0	13.4
0°-40°	3107.2	21.5
0°-60°	5295.3	36.7
0°-90°	6595.4	45.7
90°-120°	1669.4	11.6
90°-150°	5671.3	39.3
90°-180°	7844.0	54.3
0°-180°	14439.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2589	2589	2589	2589	2589	
5°	2589	2579	2552	2572	2567	246
15°	2465	2450	2417	2428	2415	694
25°	2231	2211	2168	2173	2168	1026
35°	1925	1900	1860	1845	1832	1202
45°	1566	1549	1511	1484	1474	1209
55°	1185	1170	1140	1110	1098	1060
65°	799	784	759	737	724	790
75°	418	413	401	386	391	446
85°	102	100	97	90	87	114
90°	3	30	83	78	80	14
95°	124	147	151	151	147	137
105°	509	516	521	525	525	537
115°	947	961	957	954	947	937
125°	1378	1399	1392	1385	1382	1231
135°	1782	1809	1814	1811	1804	1378
145°	2164	2181	2194	2197	2188	1352
155°	2474	2481	2489	2500	2493	1139
165°	2692	2689	2689	2706	2694	759
175°	2801	2794	2789	2806	2792	266
180°	2806	2806	2806	2806	2806	

TEST NUMBER: P910794

CATALOG NUMBER: DFN2DIP-HX3F0-060D080US850-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2589.1	2589.1	2589.1	2589.1	2589.1
2.5°	2604.2	2591.7	2564.2	2589.1	2584.3
5°	2589.1	2579.3	2551.8	2571.7	2566.9
7.5°	2571.7	2556.9	2529.4	2549.5	2544.5
10°	2544.5	2527.1	2497.1	2517.0	2509.6
12.5°	2507.0	2492.1	2462.3	2474.7	2469.7
15°	2464.6	2449.9	2417.4	2427.5	2415.1
17.5°	2412.4	2397.7	2365.2	2377.5	2365.2
20°	2355.1	2340.3	2305.4	2312.8	2303.1
22.5°	2298.1	2275.6	2243.1	2243.1	2238.1
25°	2230.6	2210.9	2168.5	2173.3	2168.5
27.5°	2155.9	2138.5	2106.2	2098.9	2086.5
30°	2081.5	2061.3	2024.1	2016.7	2006.6
32.5°	2001.6	1986.9	1947.0	1931.9	1921.9
35°	1924.6	1899.7	1859.8	1844.7	1832.3
37.5°	1837.4	1814.9	1775.1	1757.5	1745.1
40°	1747.8	1727.7	1687.9	1665.7	1655.6
42.5°	1660.6	1640.5	1601.0	1575.9	1561.0
45°	1566.1	1548.6	1511.1	1484.0	1473.9
47.5°	1473.9	1456.4	1416.6	1389.1	1374.3
50°	1376.7	1364.3	1329.5	1294.5	1282.1
52.5°	1282.1	1264.7	1232.4	1205.0	1187.6
55°	1185.2	1170.1	1140.3	1110.4	1098.0
57.5°	1088.0	1075.6	1043.1	1013.3	1003.2
60°	990.8	981.0	946.2	918.7	911.3
62.5°	896.2	878.8	853.9	829.1	819.1
65°	799.3	784.3	759.4	736.9	724.5
67.5°	699.7	687.0	664.8	647.4	637.3
70°	607.5	597.5	575.0	557.6	547.8
72.5°	512.9	502.9	490.5	473.1	465.7
75°	418.1	413.4	400.7	385.9	390.9
77.5°	333.6	323.6	318.5	311.2	303.8
80°	249.1	246.4	241.4	234.0	229.0
82.5°	169.3	169.3	166.9	156.9	156.9
85°	101.9	99.6	97.1	89.5	87.2
87.5°	44.9	39.9	34.8	27.5	24.8
90°	2.6	30.5	83.0	77.9	80.4
92.5°	52.5	71.1	73.6	76.1	76.1
95°	123.5	147.2	151.4	151.4	147.2
97.5°	205.6	227.6	236.9	236.9	236.9
100°	300.3	319.7	326.5	326.5	323.9
102.5°	400.1	414.5	423.7	426.3	423.7
105°	509.3	516.0	521.1	525.3	525.3
107.5°	617.5	627.7	627.7	629.4	617.5
110°	722.4	735.9	735.9	735.9	729.2



TEST NUMBER: P910794

CATALOG NUMBER: DFN2DIP-HX3F0-060D080US850-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	835.7	850.2	847.6	840.8	835.7
115°	947.4	960.9	956.7	954.2	947.4
117.5°	1058.2	1076.8	1065.0	1058.2	1051.4
120°	1169.9	1188.5	1169.9	1169.9	1162.2
122.5°	1271.4	1295.1	1283.2	1276.5	1271.4
125°	1377.9	1399.1	1392.3	1384.7	1382.3
127.5°	1482.1	1508.2	1498.9	1488.8	1482.1
130°	1579.3	1609.7	1605.5	1600.5	1591.2
132.5°	1688.5	1712.1	1713.8	1702.0	1695.2
135°	1782.3	1808.6	1813.7	1811.1	1804.3
137.5°	1887.2	1908.4	1912.6	1910.9	1900.7
140°	1979.5	2000.5	2012.4	2012.4	2003.1
142.5°	2074.2	2095.3	2102.1	2104.7	2095.3
145°	2163.9	2180.7	2194.3	2196.8	2187.5
147.5°	2244.2	2265.4	2275.4	2279.8	2270.5
150°	2327.1	2341.4	2350.7	2358.4	2350.7
152.5°	2400.7	2415.1	2426.9	2436.3	2426.9
155°	2474.3	2481.1	2488.7	2500.5	2492.9
157.5°	2537.7	2542.8	2547.0	2563.9	2552.1
160°	2594.4	2599.5	2602.0	2616.4	2606.3
162.5°	2646.9	2646.9	2649.4	2665.5	2653.6
165°	2691.7	2689.1	2689.1	2706.1	2694.2
167.5°	2732.2	2724.7	2724.7	2741.6	2729.7
170°	2762.7	2756.0	2753.4	2770.4	2756.0
172.5°	2783.9	2777.2	2774.6	2791.5	2777.2
175°	2800.8	2794.0	2788.9	2805.9	2791.5
177.5°	2810.1	2803.3	2798.2	2812.6	2798.2
180°	2805.9	2805.9	2805.9	2805.9	2805.9

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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	10.63	11.45	11.62	12.46	13.79	10.20	11.02	11.19	12.03	13.36
	3H	12.28	13.02	13.28	14.03	15.38	11.81	12.55	12.81	13.56	14.92
	4H	12.86	13.56	13.88	14.58	15.94	12.39	13.09	13.41	14.11	15.47
	6H	13.25	13.90	14.28	14.92	16.29	12.78	13.43	13.81	14.45	15.82
	8H	13.35	13.97	14.38	15.00	16.37	12.88	13.50	13.92	14.53	15.90
	12H	13.40	13.98	14.43	15.01	16.40	12.92	13.50	13.96	14.54	15.93
4H	2H	11.08	11.78	12.11	12.80	14.16	10.74	11.44	11.76	12.46	13.82
	3H	12.94	13.52	13.97	14.57	15.94	12.55	13.13	13.58	14.18	15.55
	4H	13.64	14.18	14.68	15.22	16.61	13.24	13.78	14.28	14.81	16.21
	6H	14.15	14.61	15.20	15.67	17.06	13.74	14.20	14.79	15.27	16.66
	8H	14.29	14.72	15.34	15.78	17.18	13.89	14.32	14.94	15.37	16.78
	12H	14.36	14.75	15.43	15.82	17.23	13.95	14.33	15.01	15.40	16.81
8H	4H	13.83	14.26	14.88	15.32	16.72	13.48	13.91	14.53	14.96	16.37
	6H	14.45	14.81	15.53	15.90	17.31	14.10	14.45	15.17	15.55	16.95
	8H	14.67	14.98	15.75	16.06	17.48	14.30	14.62	15.39	15.70	17.12
	12H	14.79	15.07	15.88	16.14	17.61	14.41	14.69	15.50	15.76	17.23
12H	4H	13.82	14.21	14.88	15.27	16.69	13.47	13.86	14.54	14.92	16.34
	6H	14.48	14.80	15.56	15.87	17.30	14.13	14.45	15.21	15.53	16.95
	8H	14.72	14.99	15.80	16.07	17.53	14.36	14.64	15.45	15.71	17.18

END OF REPORT