

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: P910931

Luminaire Tested: DFN2DIP-HX4F0-070D070US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910931
REPORT IS A COMBINATION OF REPORTS P899360 AND P896188
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-070D070US850-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

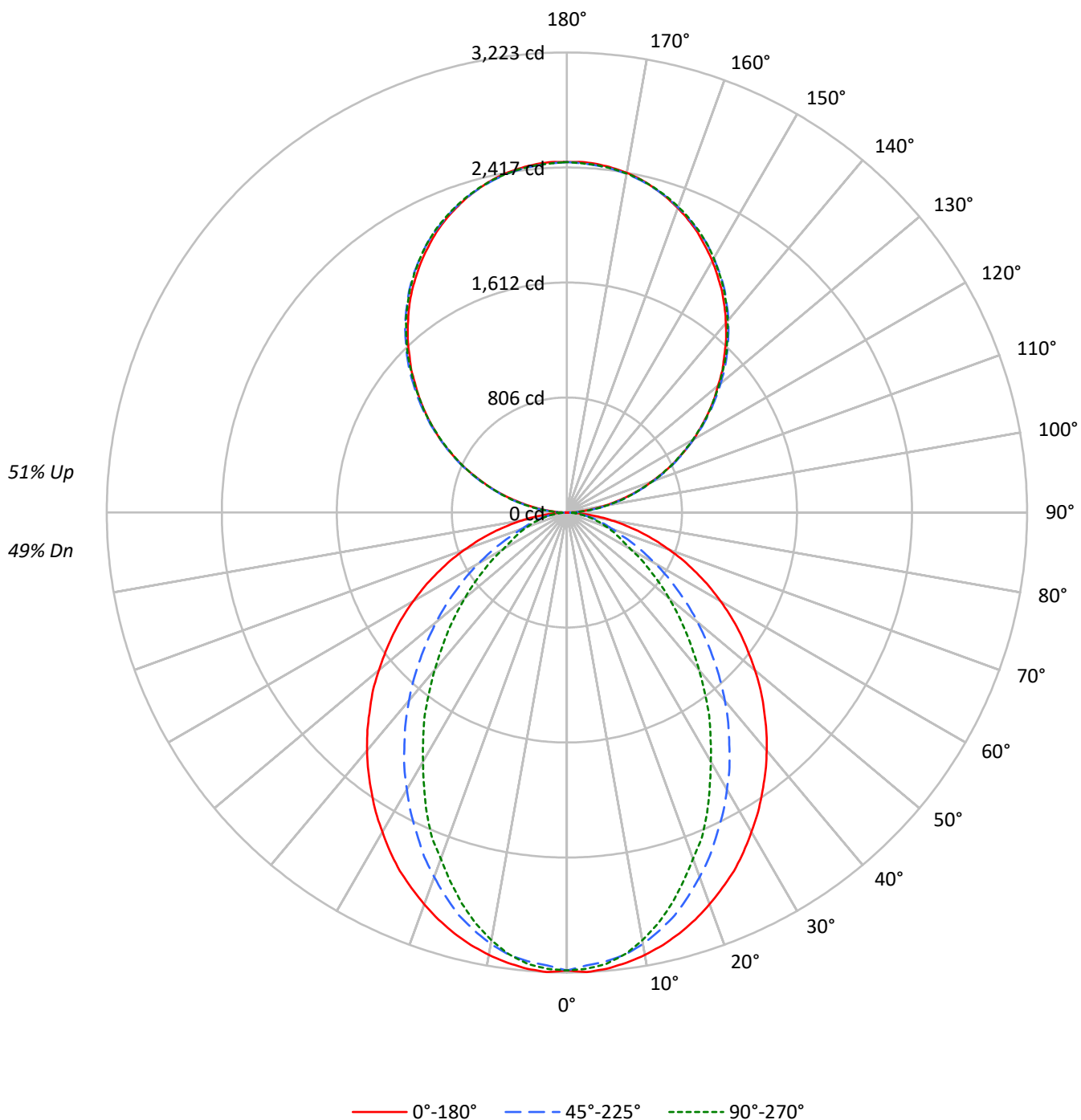
Lumens per Lamp: N/A
Luminaire Lumens: 13468.8 lumens
Efficiency: N/A
Efficacy: 127.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 105.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P910931

CATALOG NUMBER: DFN2DIP-HX4F0-070D070US850-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P910931

CATALOG NUMBER: DFN2DIP-HX4F0-070D070US850-RLLFLL

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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2386	2386	2386
5°	2390	2348	2363
10°	2366	2302	2286
15°	2334	2226	2167
20°	2291	2122	2022
25°	2247	2004	1881
30°	2188	1884	1702
35°	2130	1755	1546
40°	2071	1621	1365
45°	2003	1472	1203
50°	1932	1322	1043
55°	1858	1161	890
60°	1773	994	733
65°	1675	823	660
70°	1556	664	597
75°	1406	586	544
80°	1190	492	472
85°	832	330	355

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2003 cd/sqm

TEST NUMBER: P910931

CATALOG NUMBER: DFN2DIP-HX4F0-070D070US850-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	300.7	2.2
10°-20°	825.5	6.1
20°-30°	1158.9	8.6
30°-40°	1263.3	9.4
40°-50°	1161.1	8.6
50°-60°	911.9	6.8
60°-70°	593.5	4.4
70°-80°	305.5	2.3
80°-90°	85.0	0.6
90°-100°	151.9	1.1
100°-110°	482.7	3.6
110°-120°	826.1	6.1
120°-130°	1086.4	8.1
130°-140°	1219.5	9.1
140°-150°	1195.8	8.9
150°-160°	1003.1	7.4
160°-170°	665.3	4.9
170°-180°	232.5	1.7
0°-30°	2285.1	17.0
0°-40°	3548.4	26.3
0°-60°	5621.4	41.7
0°-90°	6605.5	49.0
90°-120°	1460.7	10.8
90°-150°	4962.4	36.8
90°-180°	6863.0	51.0
0°-180°	13468.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3208	3208	3208	3208	3208	
5°	3208	3194	3156	3182	3174	304
15°	3052	3020	2921	2866	2837	860
25°	2770	2677	2485	2366	2323	1274
35°	2387	2239	1983	1800	1736	1494
45°	1951	1756	1452	1246	1176	1507
55°	1484	1257	944	770	714	1326
65°	1002	766	505	407	398	993
75°	534	331	232	212	209	565
85°	125	64	55	55	55	143
90°	2	27	72	68	70	13
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: P910931

CATALOG NUMBER: DFN2DIP-HX4F0-070D070US850-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3208.4	3208.4	3208.4	3208.4	3208.4
2.5°	3222.9	3208.4	3176.4	3205.7	3199.8
5°	3208.4	3193.9	3156.1	3182.3	3173.6
7.5°	3182.3	3165.0	3124.4	3135.7	3121.3
10°	3147.5	3127.2	3069.2	3060.3	3043.0
12.5°	3104.0	3077.8	2999.3	2982.0	2949.9
15°	3051.6	3019.6	2921.0	2865.9	2836.9
17.5°	2990.6	2944.2	2822.2	2758.3	2711.8
20°	2921.0	2862.8	2717.7	2645.3	2581.2
22.5°	2845.6	2778.7	2610.1	2511.6	2468.2
25°	2770.1	2677.0	2485.4	2366.5	2322.8
27.5°	2680.1	2581.2	2369.3	2232.9	2166.0
30°	2584.3	2473.7	2241.4	2093.6	2015.1
32.5°	2491.3	2357.6	2119.7	1945.4	1872.7
35°	2386.8	2238.6	1983.3	1800.4	1736.3
37.5°	2285.2	2125.3	1855.5	1654.8	1582.5
40°	2177.6	2003.6	1721.7	1515.7	1440.1
42.5°	2067.4	1881.6	1588.3	1373.3	1301.0
45°	1951.3	1756.5	1451.9	1245.5	1175.9
47.5°	1840.9	1634.9	1321.3	1114.9	1051.1
50°	1719.0	1512.9	1193.4	992.9	932.2
52.5°	1599.7	1381.9	1071.4	879.8	824.7
55°	1483.6	1257.2	943.5	769.5	714.4
57.5°	1364.7	1132.4	830.5	667.8	621.4
60°	1242.7	1010.4	711.3	563.5	516.9
62.5°	1123.7	891.5	609.6	470.4	447.3
65°	1001.8	766.4	505.3	406.7	397.7
67.5°	885.6	650.3	406.7	357.0	348.4
70°	763.7	537.2	336.7	307.7	296.0
72.5°	647.5	432.5	281.6	258.5	252.6
75°	534.2	330.8	232.2	211.9	209.2
77.5°	421.1	235.0	183.0	171.2	165.5
80°	316.4	168.5	139.3	127.9	127.9
82.5°	220.6	113.3	95.8	89.9	89.9
85°	124.8	63.8	55.1	55.1	55.1
87.5°	46.5	23.1	23.1	20.3	20.3
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: P910931

CATALOG NUMBER: DFN2DIP-HX4F0-070D070US850-RLLFLL

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

TEST NUMBER: P910931

CATALOG NUMBER: DFN2DIP-HX4F0-070D070US850-RLLFLL

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	10.08	10.90	11.05	11.88	13.17	6.05	6.87	7.02	7.85	9.14
	3H	11.75	12.49	12.74	13.48	14.79	7.24	7.97	8.22	8.97	10.27
	4H	12.36	13.06	13.36	14.05	15.37	7.69	8.39	8.69	9.38	10.70
	6H	12.79	13.43	13.79	14.42	15.75	8.01	8.65	9.02	9.65	10.98
	8H	12.91	13.52	13.92	14.54	15.86	8.10	8.71	9.12	9.73	11.06
	12H	12.97	13.55	13.99	14.56	15.91	8.15	8.73	9.17	9.74	11.09
4H	2H	10.09	10.79	11.10	11.78	13.10	6.64	7.34	7.65	8.33	9.65
	3H	11.92	12.50	12.94	13.53	14.86	8.00	8.57	9.01	9.60	10.93
	4H	12.62	13.14	13.64	14.16	15.52	8.55	9.07	9.56	10.09	11.44
	6H	13.13	13.59	14.16	14.63	15.98	8.97	9.42	10.00	10.46	11.81
	8H	13.31	13.73	14.34	14.76	16.13	9.10	9.52	10.13	10.55	11.92
	12H	13.40	13.79	14.45	14.83	16.20	9.16	9.54	10.21	10.59	11.96
8H	4H	12.58	13.01	13.61	14.04	15.41	8.83	9.25	9.86	10.28	11.65
	6H	13.15	13.50	14.21	14.57	15.94	9.35	9.70	10.40	10.77	12.13
	8H	13.37	13.68	14.43	14.74	16.12	9.54	9.85	10.60	10.90	12.29
	12H	13.51	13.78	14.57	14.83	16.26	9.66	9.93	10.72	10.98	12.41
12H	4H	12.54	12.92	13.58	13.97	15.34	8.83	9.21	9.88	10.26	11.63
	6H	13.13	13.43	14.19	14.49	15.88	9.40	9.70	10.46	10.76	12.14
	8H	13.35	13.62	14.41	14.67	16.10	9.61	9.88	10.67	10.93	12.36