

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: P929206

Luminaire Tested: DFN2DIP-HX4F0-050D110US940-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P929206
REPORT IS A COMBINATION OF REPORTS P900948 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D110US940-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

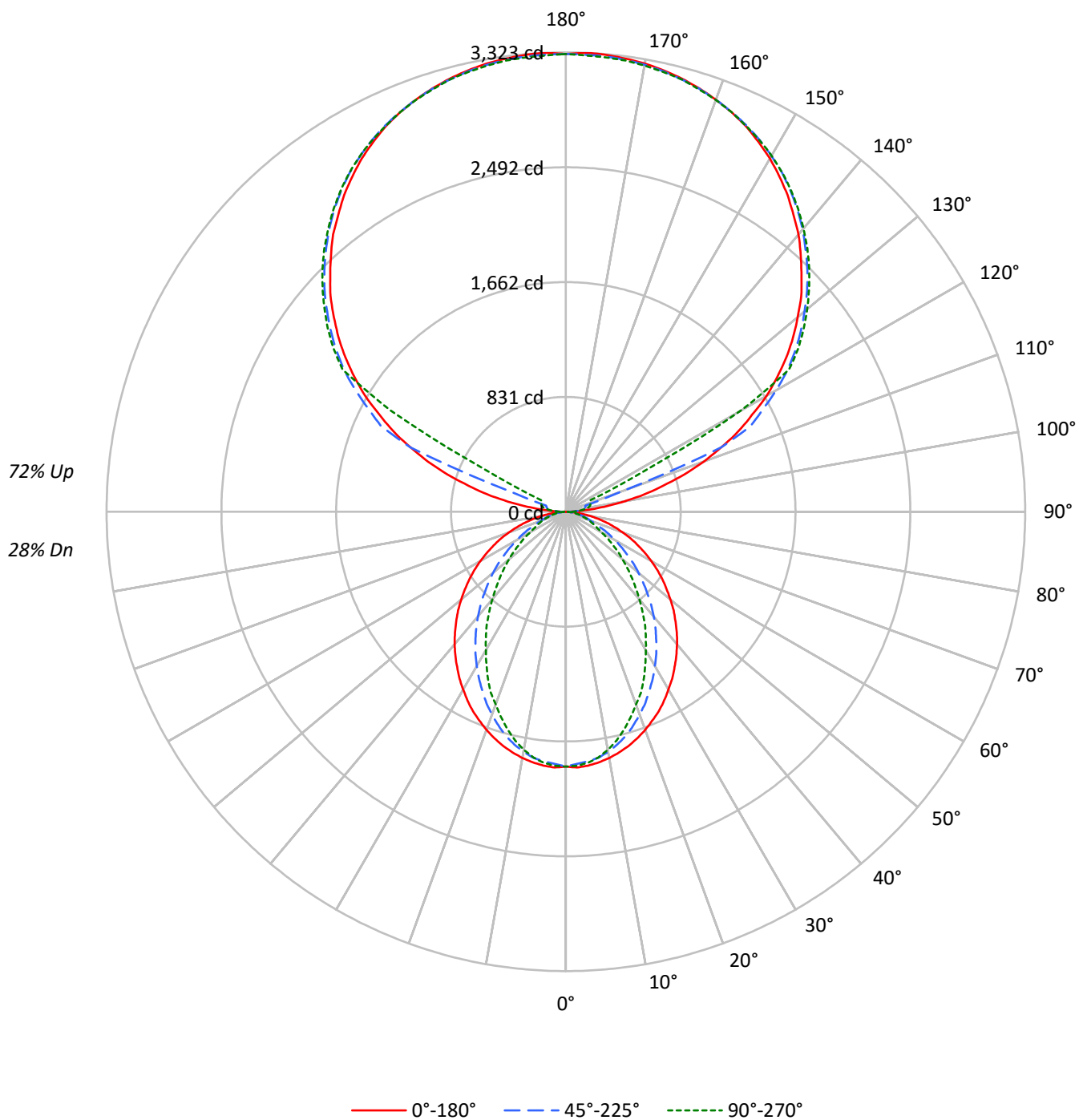
Lumens per Lamp: N/A
Luminaire Lumens: 13504.9 lumens
Efficiency: N/A
Efficacy: 103.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 130.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
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: P929206

CATALOG NUMBER: DFN2DIP-HX4F0-050D110US940-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P929206

CATALOG NUMBER: DFN2DIP-HX4F0-050D110US940-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
RCR																	
0	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36
1	93	89	85	82	83	80	77	74	63	61	59	47	46	44	32	32	31
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	29	27	26
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	26	24	23
4	71	61	53	48	63	55	49	44	43	39	35	33	30	28	23	21	20
5	65	54	47	41	58	49	42	37	39	34	31	30	26	24	21	19	17
6	60	49	41	35	54	44	37	33	35	30	27	27	24	21	19	17	15
7	55	44	36	31	50	40	33	28	32	27	24	24	21	19	17	15	14
8	51	40	32	27	46	36	30	25	29	24	21	22	19	17	16	14	12
9	48	36	29	24	43	33	27	22	26	22	19	20	17	15	15	13	11
10	45	33	26	22	40	30	24	20	24	20	17	19	16	13	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1371	1371	1371
5°	1373	1349	1358
10°	1359	1323	1313
15°	1341	1279	1245
20°	1316	1219	1162
25°	1291	1151	1081
30°	1257	1082	978
35°	1224	1008	888
40°	1190	931	785
45°	1151	846	691
50°	1110	759	599
55°	1068	667	511
60°	1019	571	421
65°	962	473	379
70°	894	382	343
75°	808	336	312
80°	684	283	271
85°	478	190	204

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1701 cd/sqm

TEST NUMBER: P929206

CATALOG NUMBER: DFN2DIP-HX4F0-050D110US940-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.8	1.3
10°-20°	474.3	3.5
20°-30°	665.8	4.9
30°-40°	725.8	5.4
40°-50°	667.1	4.9
50°-60°	523.9	3.9
60°-70°	341.0	2.5
70°-80°	175.5	1.3
80°-90°	50.6	0.4
90°-100°	109.2	0.8
100°-110°	407.0	3.0
110°-120°	1079.6	8.0
120°-130°	1790.5	13.3
130°-140°	1902.0	14.1
140°-150°	1767.7	13.1
150°-160°	1421.2	10.5
160°-170°	915.7	6.8
170°-180°	315.2	2.3
0°-30°	1312.9	9.7
0°-40°	2038.7	15.1
0°-60°	3229.7	23.9
0°-90°	3796.9	28.1
90°-120°	1595.8	11.8
90°-150°	7055.9	52.2
90°-180°	9708.0	71.9
0°-180°	13504.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1843	1843	1843	1843	1843	
5°	1843	1835	1813	1828	1823	175
15°	1753	1735	1678	1646	1630	494
25°	1591	1538	1428	1360	1334	732
35°	1371	1286	1139	1034	998	858
45°	1121	1009	834	716	676	866
55°	852	722	542	442	410	762
65°	576	440	290	234	228	571
75°	307	190	133	122	120	325
85°	72	37	32	32	32	82
90°	2	29	48	60	65	13
95°	156	76	93	106	103	184
105°	728	800	146	172	182	778
115°	1378	1418	1478	369	197	1356
125°	1948	1979	2025	2042	2049	1737
135°	2411	2449	2470	2495	2490	1862
145°	2796	2794	2834	2851	2839	1749
155°	3079	3058	3086	3101	3082	1419
165°	3244	3230	3237	3254	3237	917
175°	3318	3302	3307	3323	3300	316
180°	3312	3312	3312	3312	3312	

TEST NUMBER: P929206

CATALOG NUMBER: DFN2DIP-HX4F0-050D110US940-RLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1843.3	1843.3	1843.3	1843.3	1843.3
2.5°	1851.6	1843.3	1824.9	1841.7	1838.3
5°	1843.3	1835.0	1813.3	1828.2	1823.3
7.5°	1828.2	1818.3	1795.0	1801.6	1793.2
10°	1808.3	1796.6	1763.3	1758.2	1748.2
12.5°	1783.3	1768.3	1723.2	1713.3	1694.8
15°	1753.2	1734.9	1678.2	1646.5	1629.9
17.5°	1718.2	1691.5	1621.4	1584.7	1558.0
20°	1678.2	1644.8	1561.4	1519.8	1483.0
22.5°	1634.9	1596.4	1499.6	1443.0	1418.0
25°	1591.4	1538.0	1427.9	1359.6	1334.4
27.5°	1539.8	1483.0	1361.2	1282.8	1244.4
30°	1484.7	1421.2	1287.8	1202.8	1157.6
32.5°	1431.3	1354.5	1217.8	1117.7	1075.9
35°	1371.3	1286.2	1139.4	1034.3	997.5
37.5°	1312.8	1221.1	1066.0	950.8	909.2
40°	1251.1	1151.1	989.1	870.8	827.4
42.5°	1187.8	1081.0	912.5	789.0	747.4
45°	1121.1	1009.2	834.1	715.6	675.5
47.5°	1057.6	939.3	759.1	640.5	603.9
50°	987.6	869.2	685.7	570.4	535.6
52.5°	919.1	794.0	615.6	505.5	473.8
55°	852.4	722.3	542.1	442.1	410.4
57.5°	784.1	650.6	477.1	383.7	357.0
60°	714.0	580.5	408.6	323.7	296.9
62.5°	645.6	512.2	350.3	270.3	257.0
65°	575.5	440.4	290.3	233.6	228.5
67.5°	508.8	373.7	233.6	205.2	200.2
70°	438.8	308.6	193.5	176.8	170.1
72.5°	372.1	248.5	161.8	148.5	145.1
75°	306.9	190.1	133.4	121.8	120.2
77.5°	241.9	135.0	105.2	98.4	95.0
80°	181.8	96.8	80.0	73.4	73.4
82.5°	126.8	65.1	55.0	51.6	51.6
85°	71.7	36.7	31.7	31.7	31.7
87.5°	26.8	13.3	13.3	11.7	11.7
90°	2.3	28.7	47.8	60.0	64.6
92.5°	60.0	50.4	57.4	62.4	64.6
95°	155.7	76.5	93.3	105.5	103.0
97.5°	280.3	83.9	122.0	129.4	131.7
100°	424.2	95.9	136.6	155.7	160.5
102.5°	582.1	577.6	141.4	167.6	175.0
105°	728.4	800.4	146.3	172.4	182.1
107.5°	898.6	958.3	151.1	177.2	187.0
110°	1061.6	1111.7	419.4	179.8	189.2

TEST NUMBER: P929206

CATALOG NUMBER: DFN2DIP-HX4F0-050D110US940-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1215.0	1257.9	1217.2	184.4	191.8
115°	1377.7	1418.4	1478.5	369.0	196.6
117.5°	1519.2	1567.0	1607.9	1265.0	637.3
120°	1677.3	1713.2	1756.4	1785.2	1461.6
122.5°	1811.4	1849.7	1897.8	1912.1	1914.7
125°	1947.9	1979.3	2024.8	2041.5	2048.7
127.5°	2072.6	2106.1	2142.2	2166.1	2168.5
130°	2190.0	2228.5	2254.6	2281.1	2278.9
132.5°	2309.8	2341.1	2367.4	2389.0	2386.7
135°	2410.6	2449.0	2470.3	2494.6	2489.7
137.5°	2515.9	2544.6	2568.8	2592.7	2585.6
140°	2618.9	2638.2	2664.4	2686.0	2674.0
142.5°	2705.3	2722.1	2753.2	2772.2	2760.3
145°	2796.4	2793.8	2834.5	2851.4	2839.4
147.5°	2875.3	2868.1	2908.8	2920.8	2911.4
150°	2952.1	2935.3	2973.7	2987.9	2976.0
152.5°	3016.7	2997.6	3033.4	3048.0	3031.2
155°	3079.0	3057.6	3086.3	3100.6	3081.5
157.5°	3129.3	3110.2	3131.9	3148.7	3129.3
160°	3172.6	3158.0	3172.6	3186.8	3170.0
162.5°	3210.7	3196.5	3208.4	3225.2	3203.6
165°	3244.3	3230.0	3237.2	3253.9	3237.2
167.5°	3270.7	3256.2	3263.6	3280.4	3258.8
170°	3292.4	3277.8	3282.6	3299.5	3277.8
172.5°	3306.6	3292.4	3297.2	3314.0	3292.4
175°	3318.5	3301.7	3306.6	3323.4	3299.5
177.5°	3323.4	3306.6	3309.1	3325.9	3304.3
180°	3311.5	3311.5	3311.5	3311.5	3311.5

TEST NUMBER: P929206

CATALOG NUMBER: DFN2DIP-HX4F0-050D110US940-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	5.75	6.42	6.88	7.54	9.10	1.72	2.40	2.85	3.52	5.07
	3H	7.41	8.02	8.55	9.15	10.72	2.90	3.50	4.03	4.63	6.20
	4H	8.01	8.59	9.16	9.72	11.29	3.34	3.92	4.49	5.05	6.62
	6H	8.43	8.96	9.58	10.09	11.68	3.66	4.19	4.81	5.32	6.90
	8H	8.55	9.06	9.71	10.20	11.78	3.74	4.25	4.90	5.39	6.97
	12H	8.61	9.09	9.77	10.22	11.83	3.78	4.26	4.94	5.40	7.00
4H	2H	5.75	6.32	6.90	7.45	9.02	2.30	2.87	3.45	4.00	5.57
	3H	7.56	8.04	8.72	9.19	10.78	3.63	4.11	4.79	5.27	6.85
	4H	8.25	8.69	9.41	9.83	11.44	4.18	4.62	5.34	5.76	7.37
	6H	8.76	9.13	9.92	10.30	11.90	4.59	4.97	5.76	6.13	7.73
	8H	8.93	9.28	10.10	10.44	12.05	4.72	5.07	5.88	6.22	7.84
	12H	9.02	9.34	10.20	10.50	12.12	4.78	5.10	5.96	6.26	7.88
8H	4H	8.21	8.56	9.37	9.71	11.33	4.45	4.80	5.61	5.96	7.57
	6H	8.77	9.06	9.95	10.26	11.87	4.96	5.25	6.15	6.45	8.06
	8H	8.98	9.24	10.18	10.41	12.04	5.15	5.41	6.34	6.58	8.21
	12H	9.12	9.34	10.31	10.51	12.18	5.27	5.49	6.46	6.66	8.33
12H	4H	8.15	8.47	9.33	9.64	11.26	4.45	4.76	5.63	5.93	7.55
	6H	8.74	9.00	9.93	10.17	11.80	5.01	5.26	6.20	6.44	8.07
	8H	8.96	9.18	10.15	10.35	12.02	5.22	5.44	6.41	6.61	8.28

END OF REPORT