

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: P928554

Luminaire Tested: DFN2DIP-HX4F0-050D100US930-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928554
REPORT IS A COMBINATION OF REPORTS P900930 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-050D100US930-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

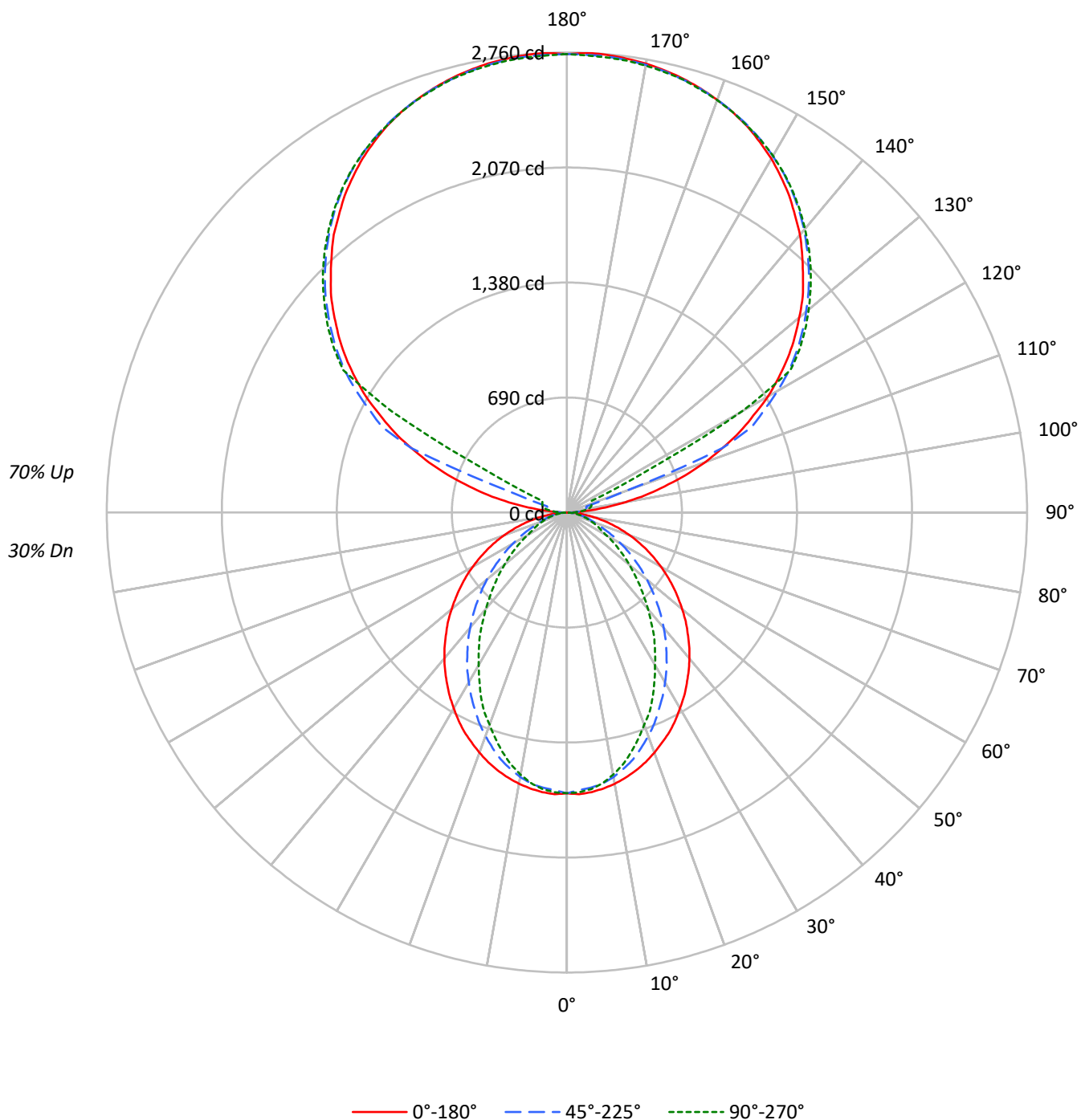
Lumens per Lamp: N/A
Luminaire Lumens: 11532.3 lumens
Efficiency: N/A
Efficacy: 96.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 119.8
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

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Luminous Intensity Polar Plot



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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	92	92	92	92	72	72	72	54	54	54	38	38	38
1	94	90	86	83	84	81	77	75	64	62	60	48	47	46	34	33	32
2	85	78	73	68	76	71	66	62	56	53	50	43	40	39	30	29	28
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	25	24
4	71	61	54	48	64	55	49	44	44	40	36	34	31	28	24	22	21
5	66	55	47	41	59	49	43	38	40	35	31	30	27	25	22	20	18
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15
8	52	40	33	28	46	36	30	25	29	25	21	23	20	17	17	15	13
9	48	37	29	25	43	33	27	23	27	22	19	21	18	15	16	13	12
10	45	33	27	22	40	30	24	20	25	20	17	20	16	14	14	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1252	1252	1252
5°	1254	1233	1240
10°	1242	1208	1200
15°	1225	1169	1138
20°	1203	1114	1061
25°	1179	1052	987
30°	1149	989	894
35°	1118	921	811
40°	1087	851	717
45°	1051	773	631
50°	1014	694	548
55°	976	610	467
60°	931	522	385
65°	879	432	346
70°	817	349	314
75°	738	307	285
80°	625	258	248
85°	437	173	186

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1411 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.8	1.4
10°-20°	433.3	3.8
20°-30°	608.4	5.3
30°-40°	663.2	5.8
40°-50°	609.5	5.3
50°-60°	478.7	4.2
60°-70°	311.6	2.7
70°-80°	160.4	1.4
80°-90°	45.8	0.4
90°-100°	90.7	0.8
100°-110°	338.1	2.9
110°-120°	896.7	7.8
120°-130°	1487.3	12.9
130°-140°	1579.8	13.7
140°-150°	1468.3	12.7
150°-160°	1180.4	10.2
160°-170°	760.6	6.6
170°-180°	261.8	2.3
0°-30°	1199.5	10.4
0°-40°	1862.7	16.2
0°-60°	2950.9	25.6
0°-90°	3468.6	30.1
90°-120°	1325.5	11.5
90°-150°	5860.8	50.8
90°-180°	8064.0	69.9
0°-180°	11532.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1684	1684	1684	1684	1684	
5°	1684	1677	1657	1670	1666	160
15°	1602	1585	1533	1504	1489	451
25°	1454	1405	1305	1242	1219	669
35°	1253	1175	1041	945	911	784
45°	1024	922	762	654	617	791
55°	779	660	495	404	375	696
65°	526	402	265	213	209	521
75°	280	174	122	111	110	297
85°	66	34	29	29	29	75
90°	2	24	40	50	54	11
95°	129	64	78	88	86	153
105°	605	665	122	143	151	646
115°	1144	1178	1228	306	163	1127
125°	1618	1644	1682	1696	1702	1443
135°	2002	2034	2052	2072	2068	1547
145°	2323	2321	2354	2368	2358	1453
155°	2558	2540	2564	2575	2560	1178
165°	2695	2683	2689	2703	2689	761
175°	2756	2742	2746	2760	2741	262
180°	2750	2750	2750	2750	2750	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1684.2	1684.2	1684.2	1684.2	1684.2
2.5°	1691.8	1684.2	1667.4	1682.7	1679.6
5°	1684.2	1676.6	1656.7	1670.4	1665.9
7.5°	1670.4	1661.4	1640.0	1646.1	1638.4
10°	1652.2	1641.5	1611.1	1606.4	1597.3
12.5°	1629.3	1615.7	1574.4	1565.4	1548.5
15°	1601.9	1585.1	1533.3	1504.4	1489.2
17.5°	1569.9	1545.5	1481.4	1447.9	1423.5
20°	1533.3	1502.8	1426.6	1388.6	1354.9
22.5°	1493.7	1458.6	1370.2	1318.4	1295.6
25°	1454.0	1405.2	1304.7	1242.2	1219.2
27.5°	1406.9	1354.9	1243.7	1172.1	1137.0
30°	1356.6	1298.5	1176.6	1098.9	1057.7
32.5°	1307.7	1237.6	1112.7	1021.2	983.1
35°	1252.9	1175.1	1041.1	945.0	911.4
37.5°	1199.5	1115.7	974.0	868.7	830.7
40°	1143.1	1051.8	903.8	795.6	756.0
42.5°	1085.3	987.7	833.7	720.9	682.9
45°	1024.3	922.1	762.1	653.8	617.2
47.5°	966.3	858.2	693.6	585.3	551.8
50°	902.4	794.1	626.5	521.2	489.3
52.5°	839.8	725.4	562.4	461.9	432.9
55°	778.8	659.9	495.3	403.9	375.0
57.5°	716.4	594.5	435.9	350.6	326.2
60°	652.3	530.4	373.4	295.8	271.3
62.5°	589.9	468.0	320.1	246.9	234.8
65°	525.8	402.4	265.2	213.4	208.8
67.5°	464.9	341.4	213.4	187.4	182.9
70°	400.9	282.0	176.8	161.5	155.4
72.5°	339.9	227.1	147.8	135.7	132.6
75°	280.4	173.7	121.9	111.2	109.8
77.5°	221.0	123.4	96.1	89.9	86.8
80°	166.1	88.4	73.1	67.1	67.1
82.5°	115.8	59.5	50.3	47.2	47.2
85°	65.5	33.5	28.9	28.9	28.9
87.5°	24.4	12.1	12.1	10.7	10.7
90°	1.9	23.9	39.7	49.9	53.6
92.5°	49.9	41.8	47.8	51.8	53.6
95°	129.3	63.6	77.5	87.7	85.6
97.5°	232.8	69.7	101.4	107.5	109.5
100°	352.4	79.6	113.4	129.3	133.3
102.5°	483.5	479.8	117.4	139.2	145.3
105°	605.1	664.8	121.5	143.2	151.3
107.5°	746.4	796.0	125.5	147.3	155.3
110°	881.7	923.4	348.3	149.4	157.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1009.1	1044.8	1011.1	153.1	159.3
115°	1144.3	1178.2	1228.0	306.5	163.3
117.5°	1261.8	1301.6	1335.5	1050.8	529.4
120°	1393.2	1423.0	1458.9	1482.8	1214.1
122.5°	1504.6	1536.4	1576.4	1588.2	1590.3
125°	1618.0	1644.0	1681.8	1695.8	1701.6
127.5°	1721.5	1749.4	1779.4	1799.3	1801.2
130°	1819.1	1851.0	1872.8	1894.7	1892.8
132.5°	1918.6	1944.6	1966.4	1984.3	1982.4
135°	2002.3	2034.2	2051.9	2072.0	2068.0
137.5°	2089.7	2113.6	2133.7	2153.6	2147.6
140°	2175.2	2191.4	2213.1	2231.1	2221.1
142.5°	2247.1	2261.1	2286.8	2302.6	2292.8
145°	2322.8	2320.6	2354.5	2368.4	2358.4
147.5°	2388.2	2382.3	2416.1	2426.0	2418.3
150°	2452.0	2438.1	2470.0	2481.8	2471.9
152.5°	2505.6	2489.8	2519.7	2531.6	2517.7
155°	2557.5	2539.7	2563.6	2575.4	2559.6
157.5°	2599.3	2583.5	2601.4	2615.3	2599.3
160°	2635.2	2623.2	2635.2	2647.0	2633.1
162.5°	2666.8	2655.0	2665.0	2678.9	2661.0
165°	2694.7	2682.9	2688.8	2702.8	2688.8
167.5°	2716.7	2704.7	2710.9	2724.8	2706.8
170°	2734.7	2722.7	2726.7	2740.6	2722.7
172.5°	2746.5	2734.7	2738.7	2752.7	2734.7
175°	2756.4	2742.5	2746.5	2760.5	2740.6
177.5°	2760.5	2746.5	2748.7	2762.6	2744.6
180°	2750.5	2750.5	2750.5	2750.5	2750.5

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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	5.71	6.40	6.83	7.51	9.04	1.68	2.37	2.80	3.48	5.01
	3H	7.38	7.99	8.50	9.11	10.66	2.86	3.48	3.99	4.59	6.14
	4H	7.98	8.56	9.11	9.68	11.23	3.31	3.89	4.44	5.01	6.56
	6H	8.39	8.93	9.54	10.05	11.62	3.62	4.16	4.76	5.28	6.84
	8H	8.52	9.03	9.66	10.16	11.72	3.71	4.22	4.85	5.35	6.91
	12H	8.57	9.06	9.72	10.19	11.77	3.75	4.23	4.90	5.36	6.94
4H	2H	5.71	6.30	6.85	7.41	8.97	2.26	2.85	3.40	3.96	5.52
	3H	7.53	8.01	8.67	9.16	10.72	3.60	4.09	4.75	5.23	6.79
	4H	8.21	8.66	9.36	9.79	11.38	4.14	4.59	5.29	5.72	7.31
	6H	8.72	9.11	9.88	10.26	11.84	4.56	4.94	5.71	6.09	7.67
	8H	8.90	9.25	10.05	10.40	11.99	4.68	5.04	5.84	6.19	7.78
	12H	8.99	9.31	10.16	10.47	12.06	4.74	5.07	5.91	6.22	7.82
8H	4H	8.17	8.53	9.33	9.68	11.27	4.41	4.77	5.57	5.92	7.51
	6H	8.73	9.03	9.91	10.22	11.81	4.93	5.22	6.10	6.41	8.00
	8H	8.95	9.21	10.13	10.38	11.99	5.12	5.38	6.30	6.54	8.15
	12H	9.08	9.31	10.27	10.47	12.12	5.23	5.46	6.42	6.62	8.27
12H	4H	8.12	8.44	9.29	9.60	11.20	4.41	4.74	5.58	5.89	7.49
	6H	8.71	8.97	9.89	10.13	11.74	4.98	5.24	6.16	6.40	8.01
	8H	8.93	9.15	10.11	10.31	11.96	5.18	5.41	6.37	6.57	8.22

END OF REPORT