

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: P919015

Luminaire Tested: DFN2DIP-HX3F0-080D050US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919015
REPORT IS A COMBINATION OF REPORTS P900759 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-080D050US935-FLLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

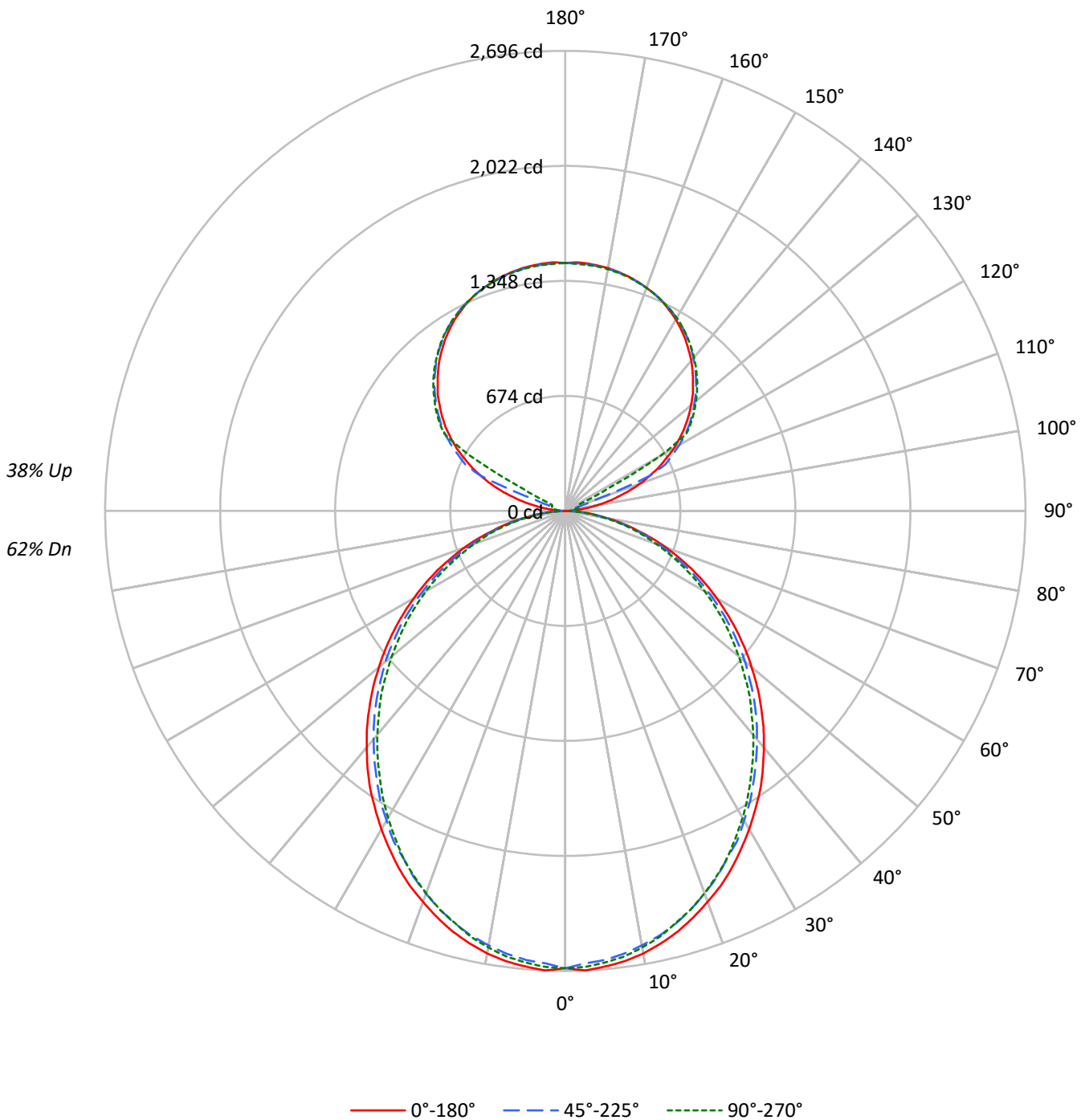
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11081.1 lumens
Efficiency: N/A
Efficacy: 95.0 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: Semi-Direct

Input Watts (W): 116.6
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

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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	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	62
1	100	96	92	88	94	90	87	83	79	76	74	69	67	65	59	58	56	52
2	91	84	78	72	85	79	73	69	69	65	61	60	57	54	52	50	48	43
3	83	74	66	60	78	69	63	57	61	56	51	53	49	46	46	43	40	37
4	76	65	57	51	71	61	54	49	54	48	44	47	43	39	41	38	35	32
5	70	58	50	44	65	55	47	42	49	43	38	43	38	34	37	33	30	27
6	65	52	44	38	60	49	42	36	44	38	33	39	34	30	34	30	27	24
7	60	47	39	34	56	45	37	32	40	34	29	35	30	27	31	27	24	21
8	56	43	35	30	52	41	34	29	36	30	26	32	27	24	28	24	21	19
9	52	39	32	27	49	37	30	26	33	28	23	30	25	21	26	22	19	17
10	49	36	29	24	45	34	28	23	31	25	21	27	23	19	24	20	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3104	3104	3104
5°	3108	3059	3080
10°	3082	3016	3037
15°	3035	2964	2970
20°	2972	2893	2902
25°	2910	2808	2823
30°	2832	2729	2723
35°	2758	2637	2618
40°	2668	2543	2517
45°	2577	2449	2414
50°	2478	2350	2295
55°	2374	2235	2185
60°	2257	2100	2060
65°	2128	1959	1911
70°	1965	1788	1751
75°	1739	1582	1601
80°	1466	1319	1318
85°	1040	874	854

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2577 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	252.3	2.3
10°-20°	709.8	6.4
20°-30°	1043.1	9.4
30°-40°	1211.4	10.9
40°-50°	1209.9	10.9
50°-60°	1055.0	9.5
60°-70°	779.9	7.0
70°-80°	441.2	4.0
80°-90°	119.0	1.1
90°-100°	47.9	0.4
100°-110°	178.6	1.6
110°-120°	473.7	4.3
120°-130°	785.6	7.1
130°-140°	834.5	7.5
140°-150°	775.6	7.0
150°-160°	623.5	5.6
160°-170°	401.8	3.6
170°-180°	138.3	1.2
0°-30°	2005.1	18.1
0°-40°	3216.5	29.0
0°-60°	5481.5	49.5
0°-90°	6821.6	61.6
90°-120°	700.2	6.3
90°-150°	3095.8	27.9
90°-180°	4259.0	38.4
0°-180°	11081.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2680	2680	2680	2680	2680	
5°	2680	2670	2642	2662	2657	254
15°	2551	2536	2502	2513	2500	719
25°	2309	2289	2245	2250	2245	1063
35°	1992	1966	1925	1910	1897	1244
45°	1621	1603	1564	1536	1526	1251
55°	1227	1211	1180	1150	1137	1097
65°	827	812	786	763	750	818
75°	433	428	415	400	405	462
85°	106	103	101	93	90	118
90°	1	13	21	26	28	10
95°	68	34	41	46	45	81
105°	320	351	64	76	80	342
115°	604	622	649	162	86	595
125°	855	868	888	896	899	762
135°	1058	1074	1084	1094	1092	817
145°	1227	1226	1244	1251	1246	767
155°	1351	1342	1354	1360	1352	622
165°	1423	1417	1420	1428	1420	402
175°	1456	1449	1451	1458	1448	139
180°	1453	1453	1453	1453	1453	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2680.1	2680.1	2680.1	2680.1	2680.1
2.5°	2695.7	2682.9	2654.5	2680.1	2675.2
5°	2680.1	2670.0	2641.6	2662.1	2657.2
7.5°	2662.1	2646.8	2618.4	2639.1	2634.0
10°	2634.0	2615.9	2585.0	2605.5	2597.9
12.5°	2595.1	2579.8	2548.9	2561.7	2556.6
15°	2551.4	2536.1	2502.4	2512.8	2500.0
17.5°	2497.2	2481.9	2448.2	2461.2	2448.2
20°	2437.9	2422.6	2386.5	2394.2	2384.0
22.5°	2378.9	2355.6	2321.9	2321.9	2316.8
25°	2309.1	2288.6	2244.9	2249.8	2244.9
27.5°	2231.7	2213.7	2180.3	2172.6	2159.8
30°	2154.6	2133.8	2095.3	2087.7	2077.2
32.5°	2072.1	2056.8	2015.4	1999.8	1989.5
35°	1992.2	1966.5	1925.2	1909.6	1896.8
37.5°	1901.9	1878.7	1837.5	1819.4	1806.5
40°	1809.3	1788.5	1747.2	1724.2	1713.8
42.5°	1719.1	1698.2	1657.2	1631.2	1616.0
45°	1621.2	1603.1	1564.3	1536.1	1525.8
47.5°	1525.8	1507.7	1466.4	1438.0	1422.6
50°	1425.1	1412.3	1376.1	1340.1	1327.2
52.5°	1327.2	1309.1	1275.8	1247.4	1229.3
55°	1226.8	1211.3	1180.4	1149.5	1136.6
57.5°	1126.3	1113.4	1079.8	1048.9	1038.4
60°	1025.6	1015.5	979.4	951.0	943.3
62.5°	927.7	909.7	884.0	858.3	847.9
65°	827.4	811.8	786.1	762.8	750.0
67.5°	724.3	711.2	688.2	670.2	659.8
70°	628.9	618.5	595.3	577.2	567.1
72.5°	531.0	520.6	507.7	489.7	482.1
75°	432.8	427.9	414.8	399.5	404.7
77.5°	345.3	334.9	329.8	322.1	314.4
80°	257.9	255.1	249.9	242.3	237.0
82.5°	175.3	175.3	172.8	162.4	162.4
85°	105.6	103.1	100.7	92.7	90.2
87.5°	46.5	41.3	36.1	28.4	25.7
90°	1.0	12.6	21.0	26.3	28.3
92.5°	26.3	22.1	25.2	27.4	28.3
95°	68.3	33.6	41.0	46.3	45.2
97.5°	123.0	36.9	53.6	56.8	57.8
100°	186.1	42.1	59.9	68.3	70.4
102.5°	255.5	253.4	62.1	73.5	76.8
105°	319.6	351.2	64.1	75.7	79.9
107.5°	394.3	420.4	66.3	77.7	82.1
110°	465.8	487.8	184.0	78.9	83.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	533.0	551.9	534.1	80.9	84.1
115°	604.5	622.3	648.7	162.0	86.3
117.5°	666.5	687.5	705.5	555.0	279.7
120°	735.9	751.7	770.6	783.2	641.3
122.5°	794.7	811.6	832.7	839.0	840.1
125°	854.6	868.4	888.4	895.7	898.9
127.5°	909.3	924.0	940.0	950.4	951.4
130°	960.9	977.7	989.2	1000.8	999.9
132.5°	1013.5	1027.2	1038.6	1048.2	1047.1
135°	1057.6	1074.5	1083.8	1094.5	1092.3
137.5°	1103.8	1116.5	1127.0	1137.6	1134.5
140°	1149.0	1157.5	1169.0	1178.4	1173.3
142.5°	1187.0	1194.4	1208.0	1216.3	1211.1
145°	1226.9	1225.8	1243.6	1251.0	1245.8
147.5°	1261.5	1258.3	1276.3	1281.5	1277.4
150°	1295.2	1287.9	1304.7	1311.0	1305.7
152.5°	1323.5	1315.2	1330.9	1337.3	1329.9
155°	1350.9	1341.5	1354.1	1360.4	1352.0
157.5°	1372.9	1364.6	1374.1	1381.5	1372.9
160°	1392.0	1385.6	1392.0	1398.2	1390.9
162.5°	1408.7	1402.5	1407.6	1415.0	1405.6
165°	1423.4	1417.2	1420.3	1427.6	1420.3
167.5°	1435.0	1428.7	1431.9	1439.2	1429.8
170°	1444.5	1438.1	1440.3	1447.6	1438.1
172.5°	1450.8	1444.5	1446.6	1454.0	1444.5
175°	1456.0	1448.6	1450.8	1458.1	1447.6
177.5°	1458.1	1450.8	1451.9	1459.2	1449.7
180°	1452.8	1452.8	1452.8	1452.8	1452.8



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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	12.17	13.14	13.02	14.02	15.11	11.74	12.71	12.59	13.59	14.68
	3H	13.83	14.70	14.69	15.59	16.71	13.36	14.24	14.22	15.12	16.24
	4H	14.42	15.24	15.30	16.13	17.27	13.95	14.78	14.83	15.66	16.80
	6H	14.82	15.58	15.71	16.48	17.62	14.35	15.11	15.24	16.01	17.15
	8H	14.92	15.65	15.82	16.56	17.71	14.45	15.18	15.35	16.09	17.24
	12H	14.97	15.66	15.88	16.57	17.74	14.50	15.19	15.40	16.10	17.27
4H	2H	12.64	13.47	13.52	14.36	15.49	12.30	13.13	13.18	14.01	15.15
	3H	14.51	15.20	15.40	16.12	17.27	14.12	14.81	15.01	15.73	16.88
	4H	15.22	15.85	16.13	16.77	17.94	14.82	15.45	15.73	16.37	17.54
	6H	15.73	16.28	16.66	17.22	18.39	15.33	15.87	16.25	16.81	17.99
	8H	15.88	16.39	16.81	17.33	18.52	15.48	15.98	16.40	16.92	18.11
	12H	15.96	16.42	16.90	17.37	18.56	15.54	16.00	16.49	16.95	18.15
8H	4H	15.42	15.93	16.35	16.87	18.06	15.07	15.57	15.99	16.51	17.70
	6H	16.05	16.47	17.00	17.45	18.64	15.69	16.11	16.64	17.09	18.28
	8H	16.27	16.64	17.23	17.61	18.81	15.90	16.27	16.86	17.24	18.45
	12H	16.40	16.73	17.36	17.69	18.94	16.02	16.35	16.98	17.31	18.56
12H	4H	15.41	15.87	16.36	16.82	18.02	15.06	15.52	16.01	16.48	17.67
	6H	16.08	16.45	17.04	17.42	18.62	15.73	16.10	16.69	17.07	18.28
	8H	16.32	16.65	17.28	17.61	18.86	15.97	16.30	16.93	17.26	18.51