

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: P924413

Luminaire Tested: DFN2DIP-HX3F0-050D090US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924413
REPORT IS A COMBINATION OF REPORTS P899290 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-050D090US950-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

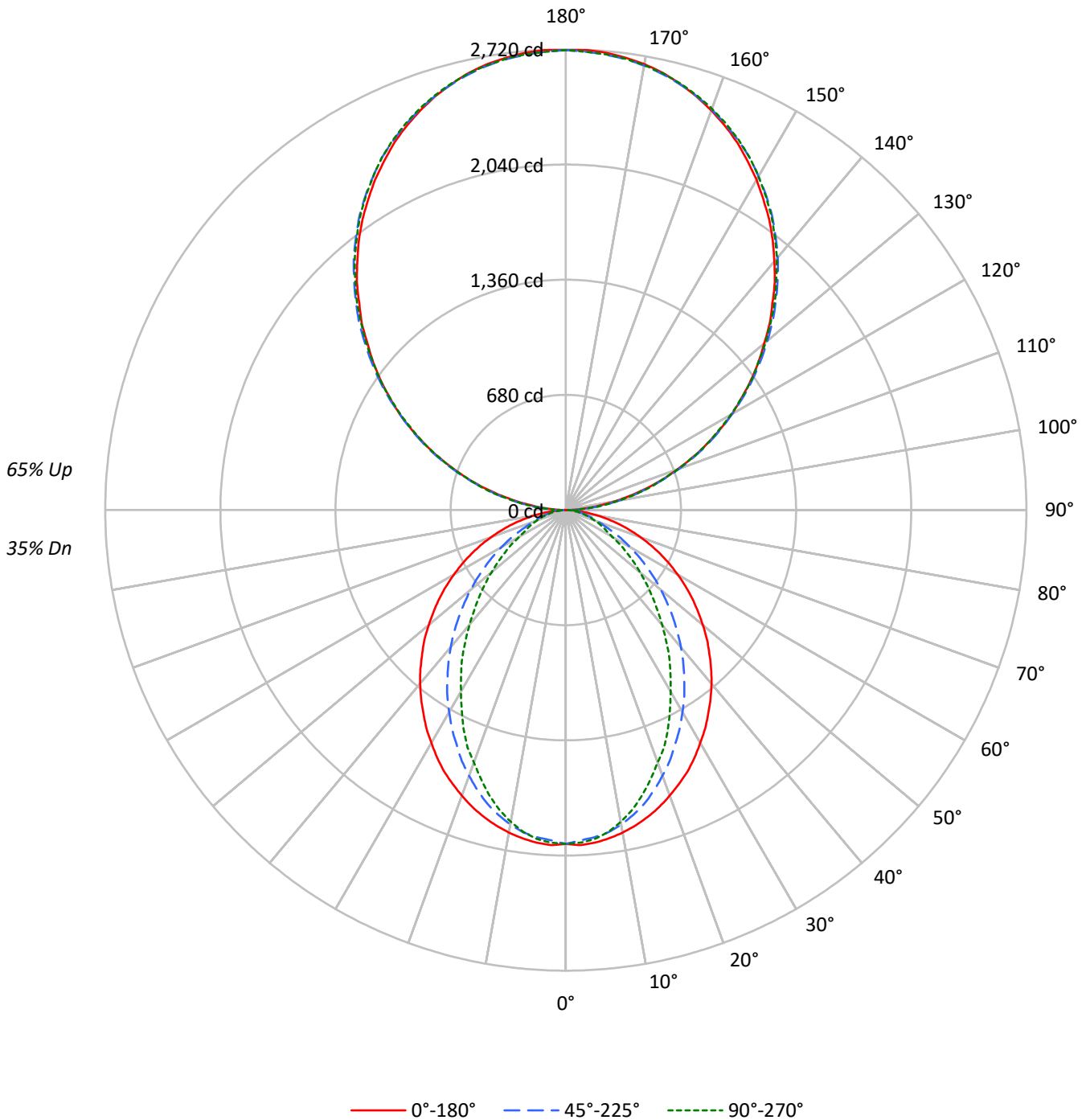
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11653.1 lumens
Efficiency: N/A
Efficacy: 100.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 115.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	50	30	10	0
RCR																					
0	104	104	104	104	94	94	94	94	75	75	75	58	58	58	42	42	42	42	42	42	35
1	95	91	87	84	85	82	79	76	66	64	62	51	50	49	38	37	36	36	36	36	30
2	86	79	74	69	78	72	67	63	58	55	52	45	43	41	34	32	31	31	31	31	26
3	79	70	63	58	71	64	58	53	52	47	44	40	38	35	30	28	27	27	27	27	22
4	72	62	55	49	65	57	50	45	46	41	38	36	33	30	27	25	23	23	23	23	19
5	67	55	48	42	60	51	44	39	41	36	33	33	29	26	25	22	21	21	21	21	17
6	61	50	42	37	55	45	39	34	37	32	29	30	26	23	22	20	18	18	18	18	15
7	57	45	37	32	51	41	34	30	34	29	25	27	23	21	21	18	16	16	16	16	14
8	53	41	33	28	48	37	31	26	31	26	22	25	21	19	19	16	15	15	15	15	12
9	49	37	30	25	44	34	28	23	28	23	20	23	19	17	17	15	13	13	13	13	11
10	46	34	27	23	41	31	25	21	26	21	18	21	18	15	16	14	12	12	12	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2284	2284	2284
5°	2286	2246	2261
10°	2263	2200	2186
15°	2230	2126	2071
20°	2188	2024	1930
25°	2145	1910	1795
30°	2087	1794	1623
35°	2030	1669	1472
40°	1973	1540	1300
45°	1906	1396	1143
50°	1837	1252	991
55°	1764	1098	844
60°	1680	937	693
65°	1583	774	623
70°	1466	621	562
75°	1319	544	508
80°	1105	452	436
85°	756	294	321

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2556 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.8	1.6
10°-20°	507.2	4.4
20°-30°	712.1	6.1
30°-40°	776.3	6.7
40°-50°	713.5	6.1
50°-60°	560.3	4.8
60°-70°	364.7	3.1
70°-80°	187.7	1.6
80°-90°	55.6	0.5
90°-100°	168.0	1.4
100°-110°	533.9	4.6
110°-120°	913.7	7.8
120°-130°	1201.6	10.3
130°-140°	1348.7	11.6
140°-150°	1322.6	11.3
150°-160°	1109.5	9.5
160°-170°	735.8	6.3
170°-180°	257.2	2.2
0°-30°	1404.1	12.0
0°-40°	2180.4	18.7
0°-60°	3454.1	29.6
0°-90°	4062.2	34.9
90°-120°	1615.6	13.9
90°-150°	5488.5	47.1
90°-180°	7591.0	65.1
0°-180°	11653.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1971	1971	1971	1971	1971	
5°	1971	1963	1939	1955	1950	187
15°	1875	1855	1795	1761	1743	528
25°	1702	1645	1527	1454	1427	783
35°	1467	1376	1219	1106	1067	918
45°	1199	1079	892	765	722	926
55°	912	772	580	473	439	815
65°	616	471	310	250	244	610
75°	328	203	143	130	128	347
85°	77	39	34	34	34	88
90°	2	30	80	75	78	12
95°	120	142	146	146	142	133
105°	493	499	504	508	508	520
115°	917	930	926	924	917	907
125°	1334	1354	1348	1340	1338	1192
135°	1725	1750	1755	1753	1746	1333
145°	2094	2110	2124	2126	2117	1308
155°	2394	2401	2408	2420	2413	1102
165°	2605	2602	2602	2619	2607	735
175°	2710	2704	2699	2716	2702	258
180°	2716	2716	2716	2716	2716	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1971.4	1971.4	1971.4	1971.4	1971.4
2.5°	1980.3	1971.4	1951.8	1969.7	1966.1
5°	1971.4	1962.6	1939.3	1955.3	1950.1
7.5°	1955.3	1944.7	1919.7	1926.8	1917.8
10°	1933.9	1921.5	1885.9	1880.4	1869.7
12.5°	1907.2	1891.2	1842.9	1832.3	1812.6
15°	1875.1	1855.4	1794.9	1761.0	1743.1
17.5°	1837.6	1809.1	1734.1	1694.9	1666.3
20°	1794.9	1759.1	1669.9	1625.4	1586.0
22.5°	1748.5	1707.4	1603.9	1543.3	1516.6
25°	1702.0	1644.9	1527.2	1454.1	1427.2
27.5°	1646.8	1586.0	1455.8	1371.9	1330.9
30°	1587.9	1520.0	1377.3	1286.4	1238.1
32.5°	1530.8	1448.6	1302.5	1195.4	1150.7
35°	1466.6	1375.6	1218.6	1106.2	1066.9
37.5°	1404.1	1305.9	1140.1	1016.9	972.4
40°	1338.1	1231.1	1057.9	931.3	884.9
42.5°	1270.3	1156.2	975.9	843.8	799.4
45°	1199.0	1079.4	892.1	765.3	722.5
47.5°	1131.2	1004.6	811.9	685.1	645.9
50°	1056.3	929.6	733.3	610.1	572.8
52.5°	983.0	849.2	658.4	540.6	506.8
55°	911.6	772.5	579.7	472.8	438.9
57.5°	838.6	695.8	510.3	410.4	381.8
60°	763.6	620.9	437.0	346.2	317.6
62.5°	690.5	547.8	374.6	289.1	274.8
65°	615.5	471.0	310.4	249.9	244.4
67.5°	544.2	399.6	249.9	219.4	214.1
70°	469.3	330.1	206.9	189.1	181.9
72.5°	397.9	265.8	173.1	158.8	155.2
75°	328.3	203.3	142.7	130.2	128.5
77.5°	258.7	144.4	112.5	105.2	101.6
80°	194.4	103.5	85.6	78.5	78.5
82.5°	135.6	69.6	58.9	55.2	55.2
85°	76.7	39.2	33.9	33.9	33.9
87.5°	28.6	14.2	14.2	12.5	12.5
90°	2.5	29.5	80.2	75.3	77.8
92.5°	50.8	68.8	71.3	73.6	73.6
95°	119.5	142.4	146.5	146.5	142.4
97.5°	198.9	220.2	229.2	229.2	229.2
100°	290.6	309.5	316.0	316.0	313.6
102.5°	387.2	401.2	410.1	412.6	410.1
105°	492.8	499.3	504.3	508.4	508.4
107.5°	597.6	607.4	607.4	609.0	597.6
110°	699.1	712.3	712.3	712.3	705.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	808.8	822.7	820.2	813.8	808.8
115°	916.9	930.0	925.9	923.5	916.9
117.5°	1024.1	1042.1	1030.7	1024.1	1017.5
120°	1132.2	1150.1	1132.2	1132.2	1124.8
122.5°	1230.4	1253.4	1241.9	1235.3	1230.4
125°	1333.6	1354.0	1347.5	1340.1	1337.7
127.5°	1434.2	1459.6	1450.7	1440.8	1434.2
130°	1528.4	1557.9	1553.8	1548.8	1539.9
132.5°	1634.0	1656.9	1658.5	1647.1	1640.6
135°	1724.8	1750.2	1755.2	1752.7	1746.2
137.5°	1826.3	1846.8	1851.0	1849.3	1839.5
140°	1915.6	1936.0	1947.5	1947.5	1938.5
142.5°	2007.3	2027.7	2034.3	2036.8	2027.7
145°	2094.1	2110.4	2123.5	2126.0	2117.0
147.5°	2171.9	2192.3	2202.1	2206.2	2197.3
150°	2252.1	2266.0	2275.0	2282.3	2275.0
152.5°	2323.3	2337.2	2348.7	2357.7	2348.7
155°	2394.5	2401.0	2408.5	2419.9	2412.6
157.5°	2455.9	2460.8	2464.9	2481.3	2469.8
160°	2510.7	2515.7	2518.2	2532.0	2522.2
162.5°	2561.5	2561.5	2564.0	2579.5	2568.1
165°	2604.9	2602.4	2602.4	2618.8	2607.4
167.5°	2644.2	2636.9	2636.9	2653.2	2641.7
170°	2673.7	2667.1	2664.7	2681.0	2667.1
172.5°	2694.1	2687.6	2685.1	2701.5	2687.6
175°	2710.5	2703.9	2699.1	2715.5	2701.5
177.5°	2719.5	2713.0	2708.0	2722.0	2708.0
180°	2715.5	2715.5	2715.5	2715.5	2715.5



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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	8.37	9.09	9.45	10.16	11.64	4.34	5.06	5.42	6.14	7.62
	3H	10.03	10.67	11.12	11.76	13.25	5.52	6.16	6.61	7.25	8.74
	4H	10.62	11.24	11.73	12.32	13.82	5.96	6.57	7.06	7.66	9.16
	6H	11.03	11.60	12.15	12.69	14.20	6.27	6.83	7.38	7.92	9.43
	8H	11.15	11.69	12.27	12.80	14.30	6.36	6.89	7.47	8.00	9.50
	12H	11.21	11.72	12.33	12.82	14.34	6.39	6.90	7.51	8.00	9.53
4H	2H	8.37	8.98	9.48	10.07	11.57	4.92	5.53	6.03	6.62	8.12
	3H	10.18	10.69	11.29	11.80	13.31	6.25	6.76	7.37	7.88	9.39
	4H	10.86	11.33	11.98	12.43	13.96	6.79	7.26	7.91	8.36	9.90
	6H	11.36	11.76	12.49	12.89	14.41	7.20	7.60	8.33	8.73	10.25
	8H	11.53	11.90	12.66	13.02	14.56	7.33	7.70	8.45	8.82	10.36
	12H	11.62	11.95	12.76	13.09	14.63	7.38	7.72	8.52	8.85	10.40
8H	4H	10.82	11.19	11.95	12.31	13.85	7.06	7.43	8.19	8.55	10.09
	6H	11.37	11.68	12.52	12.84	14.38	7.57	7.88	8.72	9.04	10.57
	8H	11.58	11.85	12.74	13.00	14.55	7.76	8.02	8.91	9.17	10.72
	12H	11.71	11.95	12.87	13.09	14.68	7.87	8.10	9.02	9.24	10.83
12H	4H	10.77	11.10	11.91	12.24	13.78	7.06	7.40	8.20	8.53	10.07
	6H	11.35	11.62	12.50	12.76	14.32	7.62	7.88	8.77	9.03	10.58
	8H	11.56	11.79	12.71	12.93	14.52	7.82	8.05	8.97	9.19	10.78