

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: P902628

Luminaire Tested: DFN2DIP-HX3F0-070D060US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902628
REPORT IS A COMBINATION OF REPORTS P899252 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-070D060US830-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

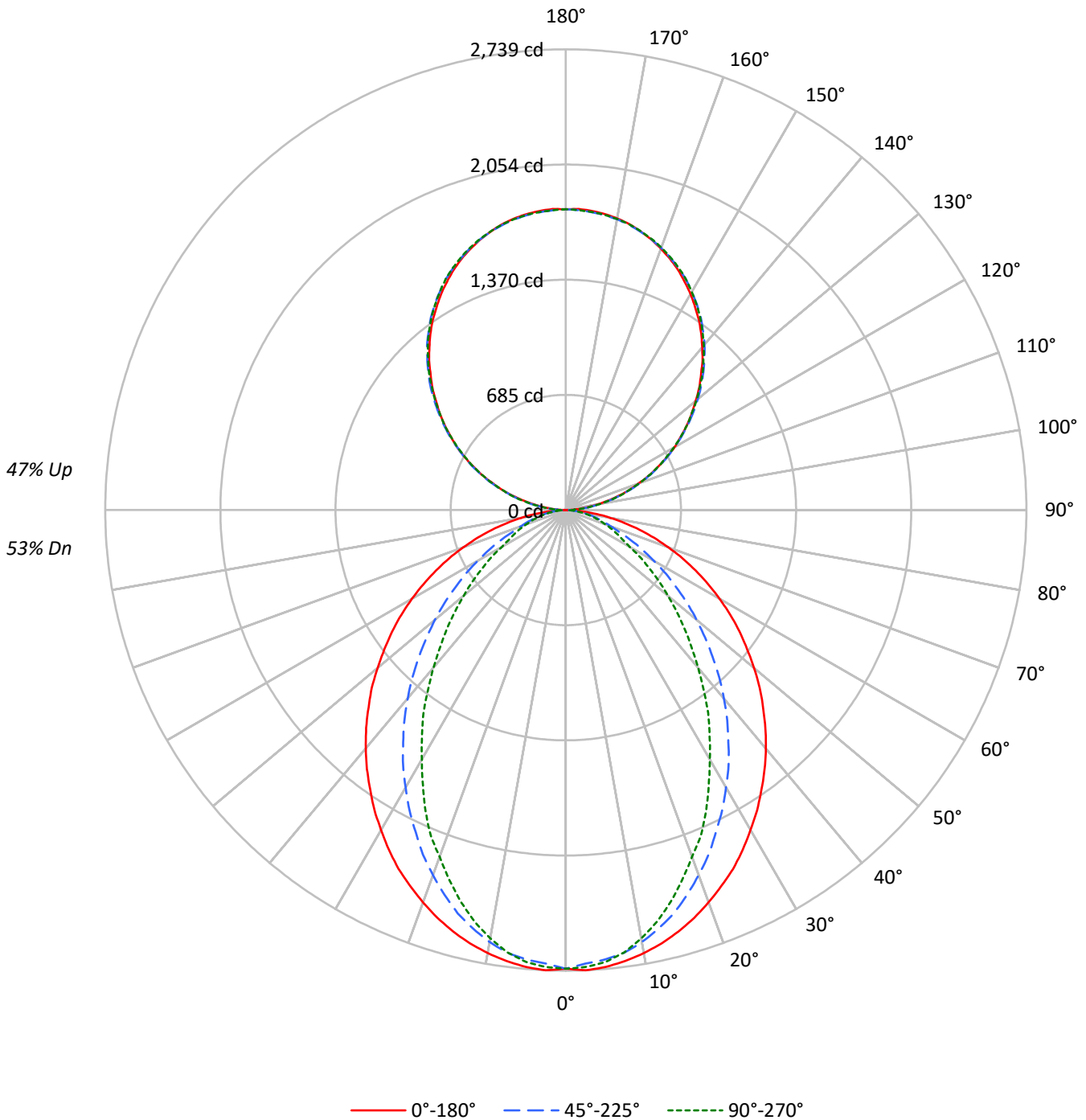
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10613.0 lumens
Efficiency: N/A
Efficacy: 92.7 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: General Diffuse

Input Watts (W): 114.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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
RCR																				
0	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59	53		
1	99	95	91	88	92	88	85	82	75	73	71	64	62	60	53	52	51	46		
2	91	83	77	72	84	78	72	68	67	63	59	56	54	51	47	45	43	39		
3	83	74	67	61	77	69	62	57	59	54	51	50	47	44	42	40	38	34		
4	76	66	58	52	70	61	54	49	53	48	44	45	41	38	38	35	33	29		
5	70	59	51	45	65	55	48	43	48	42	38	41	37	33	34	31	29	26		
6	65	53	45	39	60	50	42	37	43	38	33	37	33	30	31	28	26	23		
7	60	48	40	35	56	45	38	33	39	34	30	34	30	26	29	26	23	21		
8	56	44	36	31	52	41	34	29	36	30	27	31	27	24	27	23	21	19		
9	52	40	33	28	48	38	31	26	33	28	24	29	24	21	25	21	19	17		
10	49	37	30	25	45	35	28	24	31	25	22	27	22	19	23	20	17	15		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3159	3159	3159
5°	3162	3106	3127
10°	3130	3043	3023
15°	3085	2941	2864
20°	3027	2800	2670
25°	2967	2642	2482
30°	2887	2481	2245
35°	2808	2308	2036
40°	2729	2130	1798
45°	2636	1932	1581
50°	2540	1732	1370
55°	2440	1519	1167
60°	2324	1296	959
65°	2190	1070	861
70°	2028	859	777
75°	1824	753	703
80°	1529	625	604
85°	1044	406	443

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2636 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	255.6	2.4
10°-20°	701.6	6.6
20°-30°	985.0	9.3
30°-40°	1073.7	10.1
40°-50°	986.9	9.3
50°-60°	775.0	7.3
60°-70°	504.5	4.8
70°-80°	259.7	2.4
80°-90°	71.3	0.7
90°-100°	110.7	1.0
100°-110°	351.6	3.3
110°-120°	601.8	5.7
120°-130°	791.4	7.5
130°-140°	888.4	8.4
140°-150°	871.1	8.2
150°-160°	730.8	6.9
160°-170°	484.6	4.6
170°-180°	169.4	1.6
0°-30°	1942.1	18.3
0°-40°	3015.8	28.4
0°-60°	4777.7	45.0
0°-90°	5613.2	52.9
90°-120°	1064.1	10.0
90°-150°	3615.0	34.1
90°-180°	5000.0	47.1
0°-180°	10613.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2727	2727	2727	2727	2727	
5°	2727	2714	2682	2705	2697	259
15°	2594	2566	2483	2436	2411	731
25°	2354	2275	2112	2011	1974	1083
35°	2028	1903	1686	1530	1476	1270
45°	1658	1493	1234	1059	999	1281
55°	1261	1068	802	654	607	1127
65°	851	651	429	346	338	844
75°	454	281	197	180	178	480
85°	106	54	47	47	47	122
90°	2	19	53	50	51	10
95°	79	94	96	96	94	88
105°	325	329	332	335	335	343
115°	604	613	610	608	604	597
125°	878	892	888	883	881	785
135°	1136	1153	1156	1154	1150	878
145°	1379	1390	1399	1400	1394	862
155°	1577	1582	1586	1594	1589	726
165°	1716	1714	1714	1725	1717	484
175°	1785	1781	1778	1789	1779	170
180°	1789	1789	1789	1789	1789	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2726.9	2726.9	2726.9	2726.9	2726.9
2.5°	2739.1	2726.9	2699.6	2724.5	2719.5
5°	2726.9	2714.5	2682.4	2704.6	2697.3
7.5°	2704.6	2689.9	2655.4	2665.0	2652.8
10°	2675.0	2657.8	2608.5	2600.9	2586.2
12.5°	2638.1	2615.8	2549.1	2534.4	2507.2
15°	2593.6	2566.4	2482.6	2435.7	2411.1
17.5°	2541.8	2502.3	2398.6	2344.3	2304.8
20°	2482.6	2433.1	2309.8	2248.2	2193.8
22.5°	2418.5	2361.6	2218.4	2134.6	2097.7
25°	2354.3	2275.2	2112.3	2011.3	1974.2
27.5°	2277.8	2193.8	2013.6	1897.7	1840.9
30°	2196.4	2102.4	1905.0	1779.3	1712.6
32.5°	2117.3	2003.8	1801.6	1653.4	1591.6
35°	2028.5	1902.6	1685.6	1530.1	1475.6
37.5°	1942.2	1806.3	1577.0	1406.5	1345.0
40°	1850.8	1702.9	1463.3	1288.2	1224.0
42.5°	1757.1	1599.2	1349.9	1167.2	1105.7
45°	1658.4	1492.9	1234.0	1058.6	999.4
47.5°	1564.6	1389.5	1122.9	947.5	893.3
50°	1460.9	1285.8	1014.3	843.9	792.3
52.5°	1359.6	1174.5	910.6	747.7	700.9
55°	1260.9	1068.5	801.9	654.0	607.2
57.5°	1159.9	962.4	705.9	567.6	528.1
60°	1056.2	858.8	604.5	478.9	439.3
62.5°	955.1	757.7	518.1	399.8	380.1
65°	851.4	651.4	429.4	345.6	338.0
67.5°	752.7	552.7	345.6	303.4	296.1
70°	649.0	456.6	286.2	261.6	251.6
72.5°	550.4	367.6	239.3	219.7	214.7
75°	454.0	281.2	197.4	180.1	177.8
77.5°	357.9	199.7	155.5	145.5	140.6
80°	268.9	143.2	118.4	108.7	108.7
82.5°	187.5	96.3	81.4	76.4	76.4
85°	106.0	54.2	46.8	46.8	46.8
87.5°	39.5	19.6	19.6	17.2	17.2
90°	1.6	19.4	52.9	49.6	51.2
92.5°	33.5	45.3	46.9	48.5	48.5
95°	78.7	93.8	96.5	96.5	93.8
97.5°	131.0	145.1	151.0	151.0	151.0
100°	191.4	203.8	208.1	208.1	206.5
102.5°	255.1	264.2	270.1	271.7	270.1
105°	324.6	328.9	332.2	334.9	334.9
107.5°	393.6	400.1	400.1	401.1	393.6
110°	460.5	469.1	469.1	469.1	464.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	532.7	541.9	540.3	535.9	532.7
115°	603.9	612.6	609.8	608.2	603.9
117.5°	674.6	686.5	678.8	674.6	670.2
120°	745.7	757.6	745.7	745.7	740.8
122.5°	810.4	825.5	817.9	813.7	810.4
125°	878.4	891.8	887.5	882.7	881.1
127.5°	944.7	961.4	955.5	949.0	944.7
130°	1006.7	1026.1	1023.4	1020.2	1014.3
132.5°	1076.3	1091.4	1092.4	1084.9	1080.5
135°	1136.1	1152.8	1156.0	1154.4	1150.1
137.5°	1203.0	1216.4	1219.2	1218.0	1211.6
140°	1261.8	1275.3	1282.8	1282.8	1276.9
142.5°	1322.1	1335.6	1339.9	1341.5	1335.6
145°	1379.3	1390.1	1398.7	1400.3	1394.4
147.5°	1430.5	1444.0	1450.5	1453.1	1447.2
150°	1483.4	1492.5	1498.5	1503.3	1498.5
152.5°	1530.2	1539.5	1547.0	1552.9	1547.0
155°	1577.2	1581.5	1586.3	1593.9	1589.0
157.5°	1617.6	1620.9	1623.5	1634.4	1626.8
160°	1653.8	1657.0	1658.6	1667.7	1661.3
162.5°	1687.2	1687.2	1688.8	1699.0	1691.5
165°	1715.7	1714.1	1714.1	1724.9	1717.4
167.5°	1741.6	1736.8	1736.8	1747.6	1740.0
170°	1761.0	1756.7	1755.1	1765.9	1756.7
172.5°	1774.5	1770.2	1768.6	1779.3	1770.2
175°	1785.3	1781.0	1777.7	1788.6	1779.3
177.5°	1791.2	1787.0	1783.7	1792.8	1783.7
180°	1788.6	1788.6	1788.6	1788.6	1788.6



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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	11.36	12.22	12.30	13.17	14.40	7.34	8.19	8.28	9.15	10.38
	3H	13.04	13.80	13.99	14.76	16.02	8.53	9.29	9.48	10.25	11.51
	4H	13.64	14.36	14.61	15.33	16.59	8.98	9.70	9.94	10.66	11.93
	6H	14.06	14.72	15.03	15.69	16.97	9.29	9.96	10.27	10.93	12.20
	8H	14.18	14.81	15.16	15.80	17.07	9.38	10.01	10.36	11.00	12.28
	12H	14.24	14.84	15.23	15.82	17.12	9.42	10.03	10.41	11.01	12.30
4H	2H	11.38	12.11	12.35	13.07	14.34	7.93	8.66	8.91	9.62	10.89
	3H	13.21	13.81	14.19	14.80	16.08	9.28	9.88	10.26	10.88	12.15
	4H	13.89	14.44	14.88	15.43	16.73	9.83	10.37	10.82	11.36	12.66
	6H	14.40	14.87	15.40	15.89	17.19	10.24	10.71	11.24	11.72	13.03
	8H	14.57	15.01	15.58	16.02	17.33	10.37	10.81	11.37	11.81	13.13
	12H	14.67	15.06	15.69	16.08	17.40	10.43	10.83	11.45	11.85	13.17
8H	4H	13.86	14.30	14.86	15.31	16.62	10.10	10.54	11.11	11.55	12.86
	6H	14.42	14.78	15.45	15.83	17.14	10.62	10.98	11.64	12.03	13.34
	8H	14.63	14.95	15.67	15.99	17.32	10.80	11.12	11.84	12.16	13.49
	12H	14.77	15.05	15.80	16.08	17.45	10.92	11.20	11.96	12.23	13.60
12H	4H	13.82	14.21	14.84	15.23	16.55	10.11	10.51	11.13	11.53	12.85
	6H	14.40	14.72	15.43	15.75	17.08	10.66	10.98	11.70	12.02	13.35
	8H	14.61	14.89	15.65	15.92	17.30	10.87	11.15	11.91	12.18	13.56