

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: P927005

Luminaire Tested: DFN2DIP-HX4F0-070D100US830-RLLFLL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927005
REPORT IS A COMBINATION OF REPORTS P899414 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-070D100US830-RLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

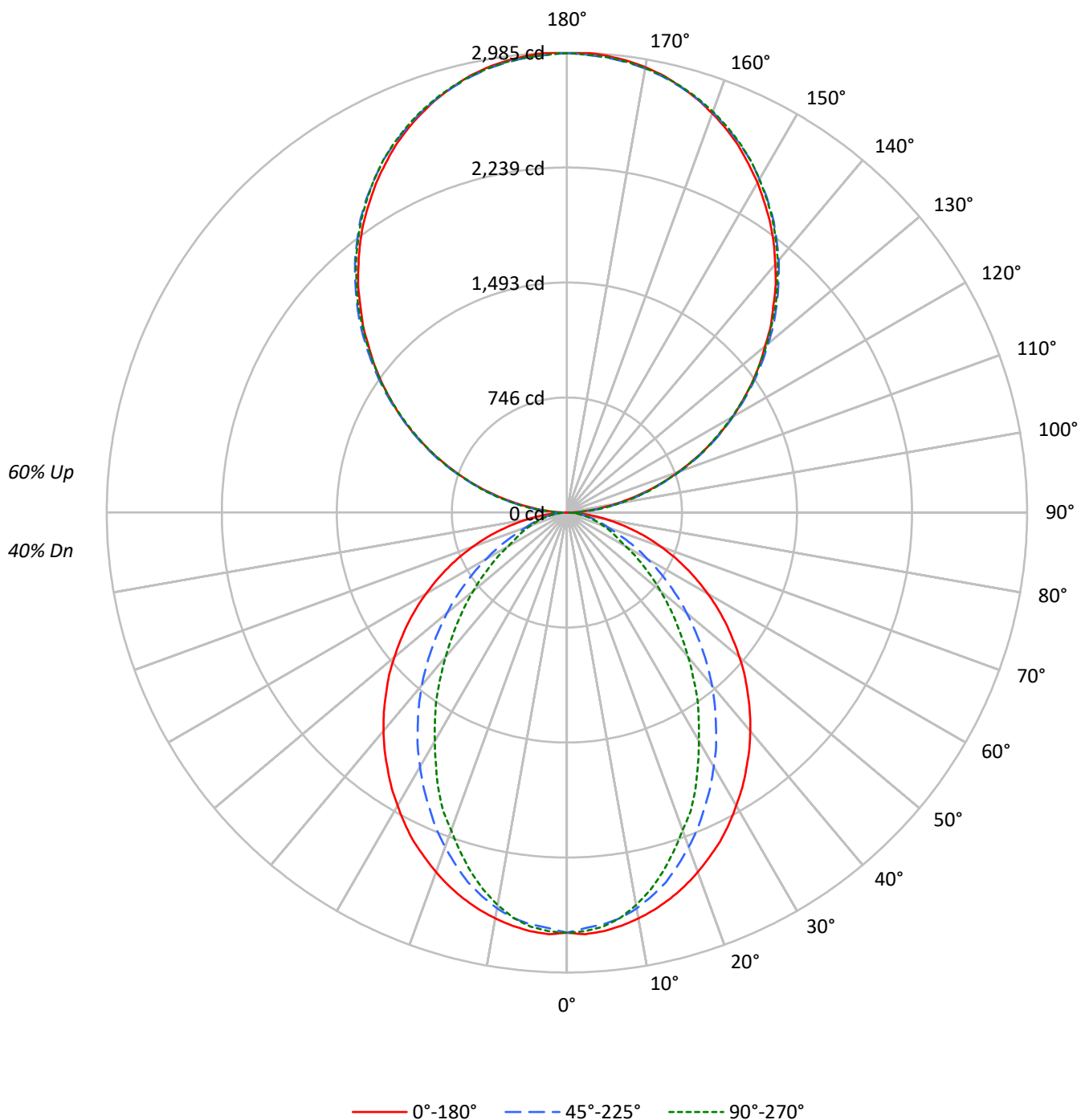
Lumens per Lamp: N/A
Luminaire Lumens: 13949.0 lumens
Efficiency: N/A
Efficacy: 98.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 142.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9972
Total Harmonic Distortion (THDi): 0.128
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	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47
1	96	92	88	85	87	84	81	78	69	67	65	55	54	52	42	41	41
2	88	81	75	70	80	74	69	65	61	57	54	49	46	44	38	36	35
3	80	71	64	59	73	65	59	54	54	50	46	43	40	38	34	32	30
4	74	63	56	50	67	58	51	46	48	43	39	39	35	33	30	28	26
5	68	56	49	43	61	52	45	40	43	38	34	35	31	29	28	25	23
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	25	23	20
7	58	46	38	33	53	42	35	31	35	30	27	29	25	22	23	20	18
8	54	42	34	29	49	38	32	27	32	27	24	27	23	20	21	19	17
9	50	38	31	26	45	35	29	24	30	25	21	25	21	18	20	17	15
10	47	35	28	23	43	32	26	22	27	22	19	23	19	16	18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2027	2027	2027
5°	2031	1996	2008
10°	2011	1957	1943
15°	1983	1892	1842
20°	1947	1803	1718
25°	1910	1703	1599
30°	1859	1601	1447
35°	1810	1491	1313
40°	1760	1377	1160
45°	1702	1251	1022
50°	1642	1123	887
55°	1579	987	757
60°	1507	844	623
65°	1423	700	561
70°	1322	564	508
75°	1195	498	462
80°	1011	419	401
85°	707	280	302

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2248 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	255.6	1.8
10°-20°	701.5	5.0
20°-30°	984.9	7.1
30°-40°	1073.7	7.7
40°-50°	986.8	7.1
50°-60°	775.0	5.6
60°-70°	504.4	3.6
70°-80°	259.7	1.9
80°-90°	74.7	0.5
90°-100°	184.5	1.3
100°-110°	586.1	4.2
110°-120°	1002.9	7.2
120°-130°	1319.0	9.5
130°-140°	1480.5	10.6
140°-150°	1451.8	10.4
150°-160°	1217.9	8.7
160°-170°	807.7	5.8
170°-180°	282.3	2.0
0°-30°	1942.0	13.9
0°-40°	3015.7	21.6
0°-60°	4777.5	34.2
0°-90°	5616.3	40.3
90°-120°	1773.4	12.7
90°-150°	6024.8	43.2
90°-180°	8333.0	59.7
0°-180°	13949.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2727	2727	2727	2727	2727	
5°	2727	2714	2682	2704	2697	259
15°	2594	2566	2482	2436	2411	731
25°	2354	2275	2112	2011	1974	1083
35°	2028	1902	1686	1530	1476	1270
45°	1658	1493	1234	1058	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°	3	32	88	83	85	14
95°	131	156	161	161	156	146
105°	541	548	554	558	558	571
115°	1006	1021	1016	1014	1006	995
125°	1464	1486	1479	1471	1468	1308
135°	1893	1921	1927	1924	1917	1464
145°	2299	2317	2331	2334	2324	1436
155°	2628	2636	2644	2656	2648	1210
165°	2860	2857	2857	2875	2862	807
175°	2975	2968	2963	2981	2966	283
180°	2981	2981	2981	2981	2981	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2726.7	2726.7	2726.7	2726.7	2726.7
2.5°	2739.0	2726.7	2699.5	2724.4	2719.4
5°	2726.7	2714.4	2682.3	2704.5	2697.2
7.5°	2704.5	2689.8	2655.3	2664.9	2652.7
10°	2674.9	2657.7	2608.4	2600.8	2586.1
12.5°	2638.0	2615.7	2549.0	2534.3	2507.0
15°	2593.5	2566.2	2482.5	2435.6	2411.0
17.5°	2541.6	2502.1	2398.5	2344.2	2304.7
20°	2482.5	2433.0	2309.7	2248.1	2193.7
22.5°	2418.4	2361.5	2218.3	2134.5	2097.6
25°	2354.2	2275.1	2112.2	2011.2	1974.1
27.5°	2277.7	2193.7	2013.6	1897.6	1840.8
30°	2196.3	2102.3	1904.9	1779.3	1712.5
32.5°	2117.2	2003.7	1801.5	1653.3	1591.5
35°	2028.4	1902.5	1685.6	1530.1	1475.6
37.5°	1942.1	1806.2	1576.9	1406.4	1344.9
40°	1850.7	1702.8	1463.2	1288.1	1223.9
42.5°	1757.0	1599.1	1349.8	1167.1	1105.6
45°	1658.3	1492.8	1233.9	1058.5	999.3
47.5°	1564.6	1389.4	1122.9	947.5	893.3
50°	1460.9	1285.8	1014.2	843.8	792.3
52.5°	1359.6	1174.4	910.5	747.7	700.8
55°	1260.9	1068.4	801.9	654.0	607.2
57.5°	1159.8	962.4	705.8	567.6	528.1
60°	1056.2	858.7	604.5	478.9	439.3
62.5°	955.0	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	456.5	286.1	261.5	251.6
72.5°	550.3	367.6	239.3	219.7	214.7
75°	454.0	281.1	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°	2.7	32.3	88.0	82.7	85.4
92.5°	55.7	75.5	78.2	80.9	80.9
95°	131.2	156.4	160.9	160.9	156.4
97.5°	218.4	241.8	251.6	251.6	251.6
100°	319.0	339.7	346.8	346.8	344.2
102.5°	425.1	440.3	450.2	452.9	450.2
105°	541.0	548.2	553.5	558.1	558.1
107.5°	656.0	666.8	666.8	668.6	656.0
110°	767.5	781.8	781.8	781.8	774.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	887.8	903.1	900.5	893.2	887.8
115°	1006.5	1020.8	1016.4	1013.7	1006.5
117.5°	1124.2	1144.0	1131.4	1124.2	1117.0
120°	1242.8	1262.6	1242.8	1242.8	1234.8
122.5°	1350.6	1375.8	1363.2	1356.1	1350.6
125°	1463.9	1486.3	1479.2	1471.1	1468.4
127.5°	1574.4	1602.2	1592.4	1581.6	1574.4
130°	1677.7	1710.1	1705.6	1700.2	1690.4
132.5°	1793.7	1818.8	1820.6	1808.1	1800.8
135°	1893.4	1921.3	1926.7	1924.0	1916.8
137.5°	2004.9	2027.3	2031.8	2030.1	2019.2
140°	2102.8	2125.2	2137.9	2137.9	2128.0
142.5°	2203.5	2225.9	2233.1	2235.8	2225.9
145°	2298.7	2316.7	2331.1	2333.7	2323.8
147.5°	2384.1	2406.6	2417.3	2421.8	2412.0
150°	2472.2	2487.4	2497.3	2505.4	2497.3
152.5°	2550.3	2565.6	2578.2	2588.1	2578.2
155°	2628.5	2635.7	2643.8	2656.3	2648.2
157.5°	2695.9	2701.3	2705.8	2723.7	2711.2
160°	2756.2	2761.5	2764.2	2779.4	2768.7
162.5°	2811.9	2811.9	2814.5	2831.6	2819.0
165°	2859.5	2856.7	2856.7	2874.7	2862.2
167.5°	2902.6	2894.5	2894.5	2912.5	2899.9
170°	2934.9	2927.8	2925.0	2943.1	2927.8
172.5°	2957.4	2950.2	2947.5	2965.5	2950.2
175°	2975.4	2968.2	2962.8	2980.8	2965.5
177.5°	2985.3	2978.1	2972.6	2987.9	2972.6
180°	2980.8	2980.8	2980.8	2980.8	2980.8

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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	8.62	9.38	9.66	10.42	11.83	4.59	5.35	5.64	6.39	7.80
	3H	10.29	10.97	11.34	12.02	13.45	5.78	6.45	6.83	7.51	8.93
	4H	10.90	11.54	11.96	12.59	14.03	6.23	6.87	7.29	7.92	9.35
	6H	11.32	11.91	12.39	12.96	14.41	6.54	7.13	7.62	8.19	9.64
	8H	11.44	12.00	12.52	13.08	14.52	6.63	7.19	7.71	8.27	9.71
	12H	11.50	12.03	12.58	13.10	14.56	6.68	7.21	7.76	8.28	9.74
4H	2H	8.63	9.27	9.70	10.32	11.76	5.18	5.82	6.25	6.88	8.31
	3H	10.45	10.99	11.53	12.07	13.51	6.52	7.06	7.60	8.14	9.59
	4H	11.14	11.63	12.23	12.70	14.17	7.07	7.56	8.15	8.63	10.10
	6H	11.65	12.07	12.75	13.17	14.63	7.49	7.91	8.58	9.00	10.46
	8H	11.83	12.22	12.92	13.31	14.78	7.62	8.01	8.71	9.10	10.57
	12H	11.92	12.27	13.03	13.38	14.86	7.68	8.03	8.79	9.13	10.62
8H	4H	11.10	11.50	12.20	12.58	14.06	7.35	7.74	8.44	8.83	10.30
	6H	11.67	11.99	12.78	13.12	14.60	7.86	8.19	8.98	9.32	10.79
	8H	11.89	12.17	13.01	13.28	14.77	8.06	8.34	9.18	9.45	10.94
	12H	12.02	12.27	13.15	13.38	14.91	8.17	8.42	9.30	9.53	11.06
12H	4H	11.05	11.41	12.16	12.51	13.99	7.35	7.70	8.46	8.80	10.28
	6H	11.64	11.93	12.77	13.04	14.53	7.91	8.20	9.03	9.31	10.80
	8H	11.86	12.11	12.99	13.22	14.75	8.12	8.37	9.25	9.48	11.01