

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: P927039

Luminaire Tested: DFN2DIP-HX4F0-080D100US830-FLLFLL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927039
REPORT IS A COMBINATION OF REPORTS P899415 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-080D100US830-FLLFLL
Description: 4 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

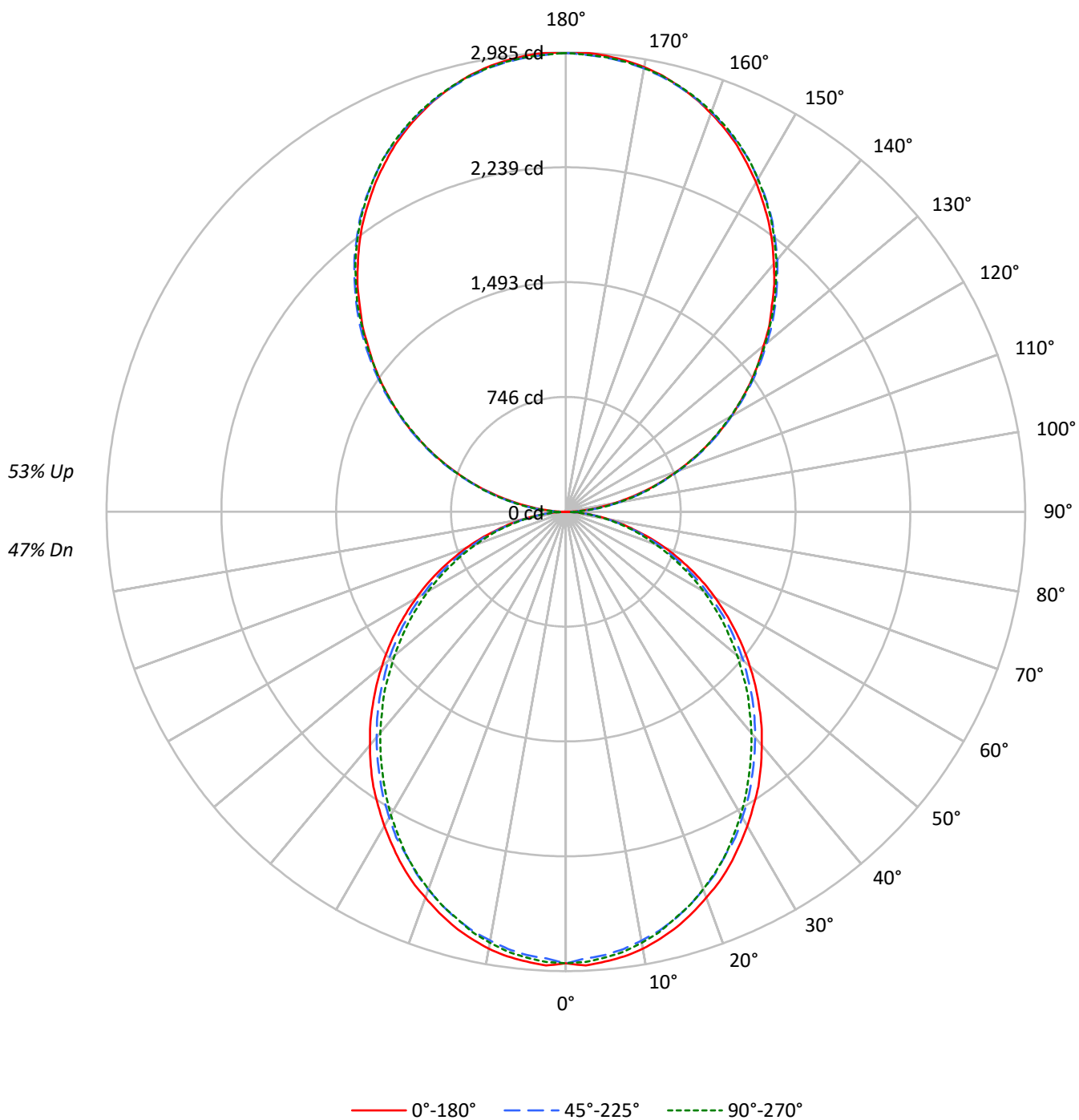
Lumens per Lamp: N/A
Luminaire Lumens: 15805.8 lumens
Efficiency: N/A
Efficacy: 103.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 152.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P927039

CATALOG NUMBER: DFN2DIP-HX4F0-080D100US830-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P927039

CATALOG NUMBER: DFN2DIP-HX4F0-080D100US830-FLLFL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	106	106	106	106	98	98	98	98	82	82	82	67	67	67	54	54	54	47	47	47
1	97	93	89	85	89	85	82	79	72	69	67	59	57	56	47	46	45	40	40	40
2	88	81	75	70	81	75	69	65	63	59	56	52	49	47	42	40	38	33	33	33
3	81	71	64	58	74	66	59	54	55	51	47	46	42	39	37	35	32	28	28	28
4	74	63	55	49	68	58	51	46	49	44	40	41	37	34	33	30	28	24	24	24
5	68	56	48	42	62	52	45	39	44	39	34	37	33	29	30	27	24	21	21	21
6	62	50	42	37	57	47	40	34	40	34	30	33	29	26	27	24	21	19	19	19
7	58	45	38	32	53	42	35	30	36	30	26	30	26	23	25	21	19	16	16	16
8	54	41	34	28	49	38	31	27	33	27	23	28	23	20	23	19	17	15	15	15
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15	13	13	13
10	47	35	27	23	43	32	26	21	28	22	19	23	19	16	19	16	14	12	12	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2181	2181	2181
5°	2185	2151	2166
10°	2168	2123	2137
15°	2136	2088	2091
20°	2093	2039	2044
25°	2050	1982	1990
30°	1997	1928	1921
35°	1946	1864	1848
40°	1884	1800	1779
45°	1822	1736	1708
50°	1753	1668	1626
55°	1682	1591	1550
60°	1602	1498	1464
65°	1514	1402	1362
70°	1402	1285	1252
75°	1247	1145	1151
80°	1062	967	958
85°	771	659	637

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2248 cd/sqm

TEST NUMBER: P927039

CATALOG NUMBER: DFN2DIP-HX4F0-080D100US830-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	276.1	1.7
10°-20°	776.9	4.9
20°-30°	1141.8	7.2
30°-40°	1326.1	8.4
40°-50°	1324.5	8.4
50°-60°	1154.9	7.3
60°-70°	853.7	5.4
70°-80°	483.0	3.1
80°-90°	136.0	0.9
90°-100°	184.5	1.2
100°-110°	586.1	3.7
110°-120°	1002.9	6.3
120°-130°	1319.0	8.3
130°-140°	1480.5	9.4
140°-150°	1451.8	9.2
150°-160°	1217.9	7.7
160°-170°	807.7	5.1
170°-180°	282.3	1.8
0°-30°	2194.9	13.9
0°-40°	3521.0	22.3
0°-60°	6000.4	38.0
0°-90°	7473.1	47.3
90°-120°	1773.4	11.2
90°-150°	6024.8	38.1
90°-180°	8333.0	52.7
0°-180°	15805.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2934	2934	2934	2934	2934	
5°	2934	2923	2892	2914	2909	278
15°	2793	2776	2739	2751	2737	787
25°	2528	2505	2457	2463	2457	1163
35°	2181	2153	2107	2090	2076	1362
45°	1775	1755	1712	1682	1670	1370
55°	1343	1326	1292	1258	1244	1201
65°	906	889	860	835	821	895
75°	474	468	454	437	443	506
85°	116	113	110	102	99	129
90°	3	32	88	83	85	15
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	

TEST NUMBER: P927039

CATALOG NUMBER: DFN2DIP-HX4F0-080D100US830-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2933.8	2933.8	2933.8	2933.8	2933.8
2.5°	2950.9	2936.8	2905.7	2933.8	2928.4
5°	2933.8	2922.8	2891.7	2914.1	2908.7
7.5°	2914.1	2897.3	2866.2	2889.0	2883.3
10°	2883.3	2863.5	2829.7	2852.1	2843.8
12.5°	2840.8	2824.0	2790.2	2804.2	2798.6
15°	2792.9	2776.1	2739.3	2750.7	2736.6
17.5°	2733.6	2716.9	2680.0	2694.1	2680.0
20°	2668.7	2651.9	2612.4	2620.8	2609.7
22.5°	2604.0	2578.6	2541.7	2541.7	2536.1
25°	2527.7	2505.3	2457.4	2462.8	2457.4
27.5°	2443.0	2423.3	2386.7	2378.3	2364.3
30°	2358.6	2335.8	2293.7	2285.3	2273.9
32.5°	2268.2	2251.4	2206.2	2189.1	2177.8
35°	2180.8	2152.7	2107.4	2090.4	2076.3
37.5°	2082.0	2056.5	2011.4	1991.6	1977.6
40°	1980.6	1957.8	1912.6	1887.5	1876.0
42.5°	1881.8	1859.0	1814.1	1785.7	1769.0
45°	1774.6	1754.8	1712.3	1681.5	1670.2
47.5°	1670.2	1650.4	1605.2	1574.1	1557.3
50°	1560.0	1546.0	1506.4	1466.9	1452.9
52.5°	1452.9	1433.1	1396.6	1365.5	1345.7
55°	1343.0	1325.9	1292.2	1258.3	1244.2
57.5°	1232.9	1218.8	1182.0	1148.2	1136.7
60°	1122.7	1111.7	1072.1	1041.0	1032.6
62.5°	1015.5	995.8	967.7	939.6	928.2
65°	905.7	888.7	860.5	835.1	821.0
67.5°	792.8	778.5	753.3	733.6	722.2
70°	688.4	677.0	651.6	631.9	620.7
72.5°	581.2	569.9	555.8	536.1	527.7
75°	473.8	468.4	454.1	437.3	443.0
77.5°	378.0	366.6	361.0	352.6	344.2
80°	282.3	279.3	273.6	265.2	259.5
82.5°	191.9	191.9	189.2	177.8	177.8
85°	115.6	112.8	110.2	101.5	98.8
87.5°	50.9	45.2	39.5	31.1	28.2
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

TEST NUMBER: P927039

CATALOG NUMBER: DFN2DIP-HX4F0-080D100US830-FLLFLL

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

TEST NUMBER: P927039

CATALOG NUMBER: DFN2DIP-HX4F0-080D100US830-FLLFLL

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	9.72	10.56	10.70	11.55	12.86	9.29	10.13	10.27	11.12	12.43
	3H	11.38	12.13	12.37	13.14	14.47	10.91	11.66	11.90	12.66	13.99
	4H	11.97	12.68	12.97	13.69	15.03	11.50	12.21	12.50	13.21	14.55
	6H	12.37	13.03	13.38	14.04	15.39	11.89	12.55	12.91	13.56	14.91
	8H	12.47	13.10	13.49	14.13	15.47	12.00	12.62	13.02	13.65	15.00
	12H	12.52	13.12	13.55	14.14	15.51	12.04	12.63	13.07	13.66	15.03
4H	2H	10.18	10.89	11.19	11.90	13.24	9.84	10.55	10.85	11.56	12.89
	3H	12.05	12.64	13.07	13.68	15.03	11.66	12.25	12.67	13.28	14.64
	4H	12.76	13.31	13.79	14.33	15.71	12.36	12.90	13.38	13.93	15.30
	6H	13.28	13.74	14.31	14.79	16.17	12.87	13.34	13.90	14.39	15.76
	8H	13.43	13.86	14.47	14.91	16.29	13.01	13.45	14.05	14.49	15.88
	12H	13.50	13.89	14.56	14.95	16.34	13.08	13.47	14.13	14.53	15.92
8H	4H	12.96	13.39	14.00	14.44	15.82	12.60	13.03	13.64	14.08	15.46
	6H	13.59	13.95	14.65	15.04	16.42	13.23	13.59	14.29	14.67	16.06
	8H	13.81	14.13	14.88	15.20	16.60	13.44	13.76	14.51	14.83	16.23
	12H	13.94	14.22	15.02	15.29	16.73	13.56	13.84	14.63	14.90	16.35
12H	4H	12.94	13.34	14.00	14.39	15.79	12.59	12.99	13.65	14.04	15.43
	6H	13.62	13.94	14.69	15.01	16.41	13.27	13.59	14.34	14.65	16.06
	8H	13.86	14.14	14.93	15.21	16.65	13.50	13.78	14.58	14.85	16.29