

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: P905354

Luminaire Tested: DFN2DIP-HX3F0-070D060US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905354
REPORT IS A COMBINATION OF REPORTS P899251 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-070D060US835-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

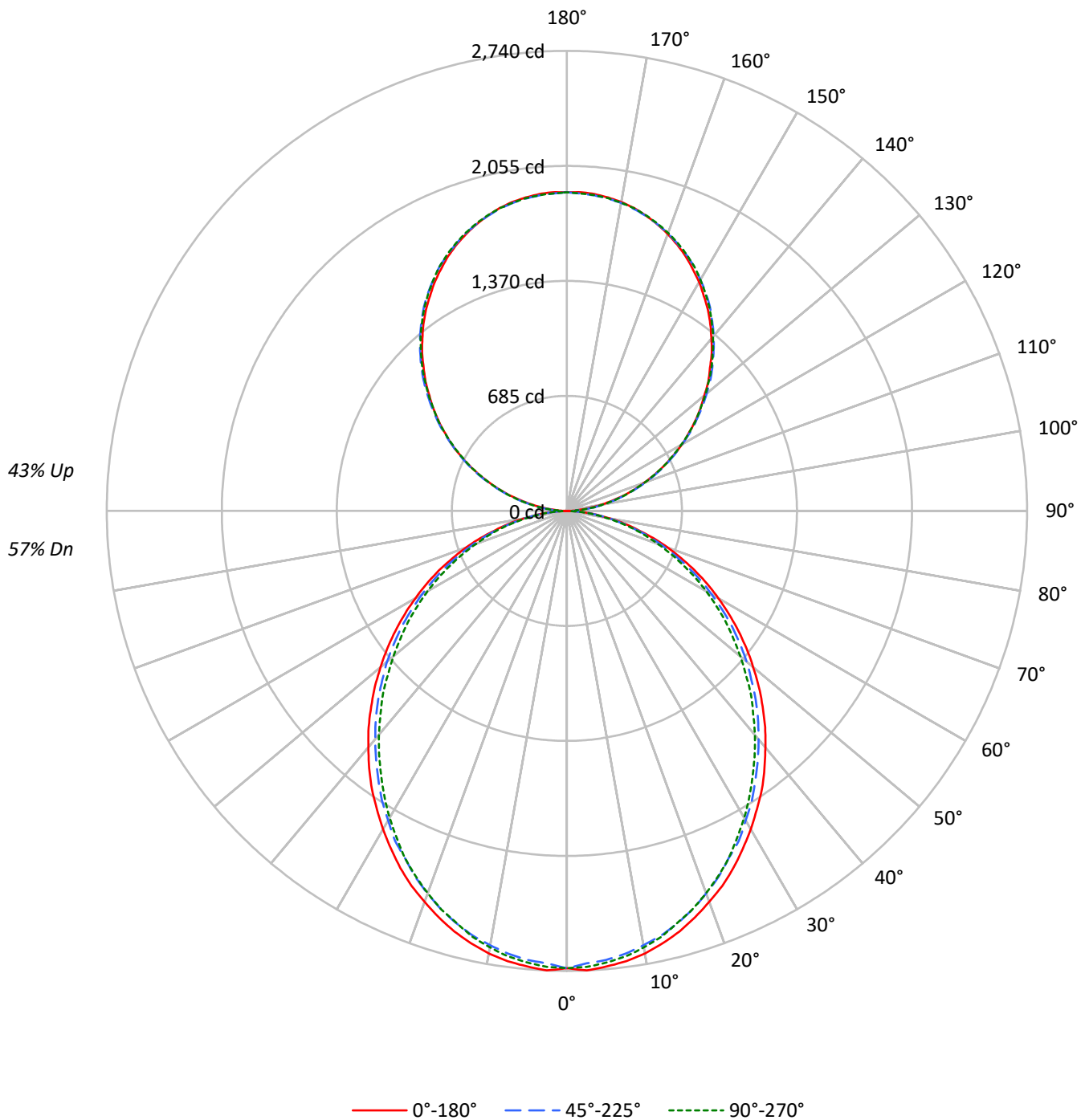
Lumens per Lamp: N/A
Luminaire Lumens: 12240.0 lumens
Efficiency: N/A
Efficacy: 106.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

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

TEST NUMBER: P905354

CATALOG NUMBER: DFN2DIP-HX3F0-070D060US835-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P905354

CATALOG NUMBER: DFN2DIP-HX3F0-070D060US835-FLLFL

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
RCR																	
0	109	109	109	109	101	101	101	101	87	87	87		74	74	74		62
1	99	95	91	87	92	88	85	82	76	74	72		65	63	62		55
2	90	83	77	71	84	77	72	67	67	63	59		57	54	52		48
3	82	73	65	60	76	68	62	56	59	54	50		51	47	44		43
4	75	65	57	50	70	60	53	48	53	47	43		45	41	37		38
5	69	58	49	43	64	54	47	41	47	41	37		41	36	32		35
6	64	52	43	38	59	48	41	36	42	36	32		37	32	28		31
7	59	47	39	33	55	44	37	31	38	33	28		33	29	25		29
8	55	42	35	29	51	40	33	28	35	29	25		31	26	23		26
9	51	39	31	26	48	37	30	25	32	27	23		28	24	20		24
10	48	36	28	23	45	34	27	22	30	24	20		26	22	18		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3155	3155	3155
5°	3159	3109	3130
10°	3132	3065	3086
15°	3084	3012	3018
20°	3020	2940	2949
25°	2957	2854	2869
30°	2878	2774	2767
35°	2803	2679	2660
40°	2711	2584	2558
45°	2619	2488	2453
50°	2518	2388	2333
55°	2413	2272	2221
60°	2293	2134	2093
65°	2163	1991	1942
70°	1997	1817	1779
75°	1767	1607	1627
80°	1490	1341	1339
85°	1057	888	869

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2619 cd/sqm

TEST NUMBER: P905354

CATALOG NUMBER: DFN2DIP-HX3F0-070D060US835-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	256.4	2.1
10°-20°	721.3	5.9
20°-30°	1060.0	8.7
30°-40°	1231.1	10.1
40°-50°	1229.6	10.0
50°-60°	1072.2	8.8
60°-70°	792.6	6.5
70°-80°	448.4	3.7
80°-90°	123.8	1.0
90°-100°	117.4	1.0
100°-110°	373.1	3.0
110°-120°	638.5	5.2
120°-130°	839.7	6.9
130°-140°	942.5	7.7
140°-150°	924.2	7.6
150°-160°	775.3	6.3
160°-170°	514.2	4.2
170°-180°	179.7	1.5
0°-30°	2037.7	16.6
0°-40°	3268.8	26.7
0°-60°	5570.6	45.5
0°-90°	6935.4	56.7
90°-120°	1129.0	9.2
90°-150°	3835.4	31.3
90°-180°	5305.0	43.3
0°-180°	12240.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2724	2724	2724	2724	2724	
5°	2724	2714	2685	2705	2700	259
15°	2593	2577	2543	2554	2541	730
25°	2347	2326	2281	2286	2281	1080
35°	2025	1998	1956	1941	1928	1264
45°	1648	1629	1590	1561	1550	1271
55°	1247	1231	1200	1168	1155	1115
65°	841	825	799	775	762	831
75°	440	435	422	406	411	470
85°	107	105	102	94	92	120
90°	2	21	56	53	54	12
95°	84	100	102	102	100	93
105°	344	349	352	355	355	363
115°	641	650	647	645	641	634
125°	932	946	942	936	935	833
135°	1205	1223	1226	1225	1220	932
145°	1463	1475	1484	1486	1479	914
155°	1673	1678	1683	1691	1686	770
165°	1820	1819	1819	1830	1822	514
175°	1894	1890	1886	1898	1888	180
180°	1898	1898	1898	1898	1898	

TEST NUMBER: P905354

CATALOG NUMBER: DFN2DIP-HX3F0-070D060US835-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2723.7	2723.7	2723.7	2723.7	2723.7
2.5°	2739.6	2726.5	2697.6	2723.7	2718.7
5°	2723.7	2713.5	2684.6	2705.4	2700.4
7.5°	2705.4	2689.8	2660.9	2682.1	2676.8
10°	2676.8	2658.4	2627.0	2647.9	2640.1
12.5°	2637.3	2621.8	2590.4	2603.4	2598.1
15°	2592.9	2577.3	2543.1	2553.7	2540.6
17.5°	2537.8	2522.3	2488.1	2501.2	2488.1
20°	2477.5	2462.0	2425.3	2433.1	2422.8
22.5°	2417.5	2393.9	2359.7	2359.7	2354.4
25°	2346.7	2325.8	2281.4	2286.4	2281.4
27.5°	2268.0	2249.7	2215.8	2208.0	2194.9
30°	2189.7	2168.5	2129.4	2121.6	2111.0
32.5°	2105.7	2090.2	2048.2	2032.4	2021.8
35°	2024.6	1998.5	1956.5	1940.7	1927.6
37.5°	1932.9	1909.3	1867.3	1849.0	1835.9
40°	1838.7	1817.6	1775.6	1752.3	1741.7
42.5°	1747.0	1725.9	1684.2	1657.8	1642.2
45°	1647.5	1629.2	1589.7	1561.1	1550.5
47.5°	1550.5	1532.2	1490.2	1461.3	1445.8
50°	1448.3	1435.2	1398.5	1361.9	1348.8
52.5°	1348.8	1330.5	1296.6	1267.7	1249.3
55°	1246.8	1231.0	1199.6	1168.2	1155.1
57.5°	1144.6	1131.5	1097.3	1065.9	1055.4
60°	1042.3	1032.0	995.4	966.5	958.7
62.5°	942.8	924.5	898.4	872.3	861.7
65°	840.9	825.0	798.9	775.3	762.2
67.5°	736.1	722.8	699.4	681.1	670.5
70°	639.1	628.6	604.9	586.6	576.3
72.5°	539.6	529.1	516.0	497.7	489.9
75°	439.9	434.9	421.5	406.0	411.3
77.5°	351.0	340.4	335.1	327.3	319.6
80°	262.0	259.3	254.0	246.2	240.9
82.5°	178.1	178.1	175.6	165.1	165.1
85°	107.3	104.8	102.3	94.2	91.7
87.5°	47.2	42.0	36.7	28.9	26.1
90°	1.7	20.6	56.1	52.6	54.3
92.5°	35.5	48.1	49.8	51.5	51.5
95°	83.5	99.5	102.4	102.4	99.5
97.5°	139.0	153.9	160.2	160.2	160.2
100°	203.1	216.2	220.8	220.8	219.1
102.5°	270.6	280.3	286.6	288.3	286.6
105°	344.4	349.0	352.4	355.3	355.3
107.5°	417.6	424.5	424.5	425.6	417.6
110°	488.6	497.7	497.7	497.7	493.1

TEST NUMBER: P905354

CATALOG NUMBER: DFN2DIP-HX3F0-070D060US835-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	565.2	574.9	573.2	568.6	565.2
115°	640.7	649.9	647.0	645.3	640.7
117.5°	715.7	728.3	720.2	715.7	711.1
120°	791.2	803.8	791.2	791.2	786.0
122.5°	859.8	875.8	867.8	863.3	859.8
125°	931.9	946.2	941.6	936.5	934.8
127.5°	1002.3	1020.0	1013.7	1006.9	1002.3
130°	1068.1	1088.7	1085.8	1082.4	1076.1
132.5°	1141.9	1157.9	1159.0	1151.0	1146.4
135°	1205.4	1223.1	1226.5	1224.8	1220.2
137.5°	1276.3	1290.6	1293.5	1292.3	1285.5
140°	1338.7	1353.0	1361.0	1361.0	1354.7
142.5°	1402.7	1417.0	1421.6	1423.3	1417.0
145°	1463.4	1474.8	1484.0	1485.7	1479.4
147.5°	1517.7	1532.0	1538.9	1541.7	1535.4
150°	1573.8	1583.5	1589.8	1594.9	1589.8
152.5°	1623.5	1633.3	1641.3	1647.6	1641.3
155°	1673.3	1677.9	1683.0	1691.1	1685.9
157.5°	1716.2	1719.7	1722.5	1734.0	1726.0
160°	1754.6	1758.0	1759.7	1769.4	1762.6
162.5°	1790.0	1790.0	1791.7	1802.6	1794.6
165°	1820.3	1818.6	1818.6	1830.1	1822.1
167.5°	1847.8	1842.7	1842.7	1854.1	1846.1
170°	1868.4	1863.8	1862.1	1873.5	1863.8
172.5°	1882.7	1878.1	1876.4	1887.8	1878.1
175°	1894.1	1889.6	1886.1	1897.6	1887.8
177.5°	1900.4	1895.9	1892.4	1902.1	1892.4
180°	1897.6	1897.6	1897.6	1897.6	1897.6

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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	11.81	12.74	12.71	13.66	14.83	11.38	12.31	12.28	13.23	14.40
	3H	13.47	14.30	14.38	15.23	16.42	13.00	13.83	13.91	14.76	15.96
	4H	14.06	14.84	14.98	15.77	16.98	13.59	14.37	14.51	15.30	16.51
	6H	14.45	15.18	15.39	16.11	17.33	13.98	14.71	14.92	15.64	16.86
	8H	14.56	15.25	15.50	16.20	17.42	14.09	14.78	15.03	15.73	16.95
	12H	14.60	15.26	15.55	16.21	17.45	14.13	14.78	15.08	15.73	16.98
4H	2H	12.28	13.06	13.21	14.00	15.20	11.94	12.72	12.87	13.65	14.86
	3H	14.14	14.80	15.08	15.76	16.98	13.75	14.41	14.69	15.37	16.59
	4H	14.85	15.45	15.80	16.41	17.65	14.45	15.05	15.40	16.01	17.25
	6H	15.36	15.88	16.33	16.86	18.11	14.96	15.48	15.92	16.46	17.70
	8H	15.51	15.99	16.48	16.97	18.23	15.10	15.59	16.07	16.56	17.82
	12H	15.58	16.02	16.57	17.01	18.28	15.17	15.60	16.15	16.59	17.86
8H	4H	15.05	15.53	16.02	16.51	17.77	14.69	15.18	15.66	16.15	17.41
	6H	15.68	16.08	16.67	17.09	18.35	15.32	15.72	16.31	16.73	17.99
	8H	15.89	16.24	16.89	17.25	18.53	15.53	15.88	16.53	16.88	18.16
	12H	16.02	16.33	17.03	17.33	18.65	15.64	15.95	16.65	16.95	18.27
12H	4H	15.04	15.47	16.02	16.47	17.73	14.69	15.12	15.67	16.12	17.38
	6H	15.71	16.06	16.71	17.06	18.34	15.36	15.71	16.36	16.71	17.99
	8H	15.94	16.25	16.95	17.25	18.58	15.59	15.90	16.59	16.90	18.22