

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: P905358

Luminaire Tested: DFN2DIP-HX3F0-070D070US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905358
REPORT IS A COMBINATION OF REPORTS P899265 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-070D070US835-FLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

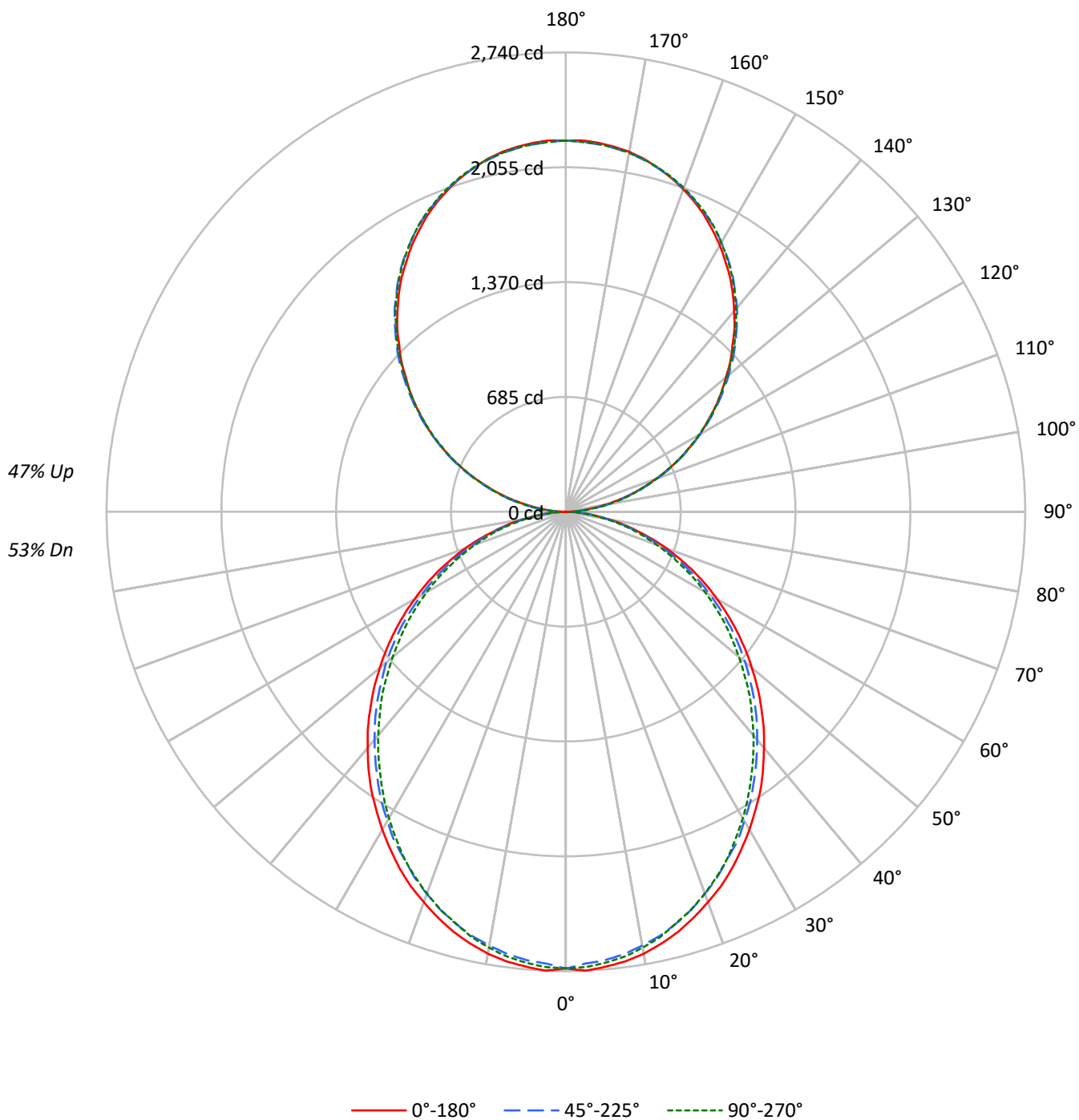
Lumens per Lamp: N/A
Luminaire Lumens: 13125.1 lumens
Efficiency: N/A
Efficacy: 107.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 122.6
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: P905358

CATALOG NUMBER: DFN2DIP-HX3F0-070D070US835-FLLFLL

Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-HX3F0-070D070US835-FLLFLL

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	108	108	108	108	100	100	100	100	85	85	85		71	71	71		59
1	98	94	90	87	91	87	84	81	74	72	70		63	61	59		52
2	90	82	76	71	83	76	71	66	65	61	58		55	52	50		46
3	82	72	65	59	75	67	61	55	58	53	49		49	45	42		41
4	75	64	56	50	69	60	52	47	51	46	41		43	39	36		36
5	69	57	49	43	63	53	46	40	46	40	36		39	35	31		33
6	63	51	43	37	58	48	40	35	41	36	31		35	31	27		30
7	59	46	38	33	54	43	36	31	37	32	28		32	28	24		27
8	54	42	34	29	50	39	32	27	34	29	24		29	25	22		25
9	51	38	31	26	47	36	29	24	31	26	22		27	23	19		23
10	47	35	28	23	44	33	26	22	29	23	20		25	21	18		21

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: P905358

CATALOG NUMBER: DFN2DIP-HX3F0-070D070US835-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	256.4	2.0
10°-20°	721.3	5.5
20°-30°	1060.0	8.1
30°-40°	1231.1	9.4
40°-50°	1229.6	9.4
50°-60°	1072.2	8.2
60°-70°	792.6	6.0
70°-80°	448.4	3.4
80°-90°	124.7	0.9
90°-100°	137.0	1.0
100°-110°	435.3	3.3
110°-120°	744.9	5.7
120°-130°	979.6	7.5
130°-140°	1099.6	8.4
140°-150°	1078.3	8.2
150°-160°	904.5	6.9
160°-170°	599.9	4.6
170°-180°	209.7	1.6
0°-30°	2037.7	15.5
0°-40°	3268.8	24.9
0°-60°	5570.6	42.4
0°-90°	6936.3	52.8
90°-120°	1317.2	10.0
90°-150°	4474.7	34.1
90°-180°	6189.0	47.2
0°-180°	13125.1	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	24	65	61	63	13
95°	97	116	120	120	116	108
105°	402	407	411	414	414	424
115°	748	758	755	753	748	739
125°	1087	1104	1099	1093	1091	972
135°	1406	1427	1431	1429	1424	1087
145°	1707	1721	1731	1733	1726	1067
155°	1952	1958	1964	1973	1967	899
165°	2124	2122	2122	2135	2126	599
175°	2210	2204	2200	2214	2202	210
180°	2214	2214	2214	2214	2214	

TEST NUMBER: P905358

CATALOG NUMBER: DFN2DIP-HX3F0-070D070US835-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°	2.0	24.0	65.4	61.4	63.4
92.5°	41.4	56.1	58.1	60.1	60.1
95°	97.4	116.1	119.5	119.5	116.1
97.5°	162.2	179.5	186.9	186.9	186.9
100°	236.9	252.3	257.6	257.6	255.6
102.5°	315.7	327.0	334.4	336.4	334.4
105°	401.8	407.1	411.1	414.5	414.5
107.5°	487.2	495.2	495.2	496.6	487.2
110°	570.0	580.7	580.7	580.7	575.3

TEST NUMBER: P905358

CATALOG NUMBER: DFN2DIP-HX3F0-070D070US835-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	659.4	670.8	668.8	663.4	659.4
115°	747.5	758.2	754.9	752.9	747.5
117.5°	834.9	849.6	840.3	834.9	829.6
120°	923.0	937.7	923.0	923.0	917.0
122.5°	1003.1	1021.8	1012.5	1007.1	1003.1
125°	1087.2	1103.9	1098.6	1092.6	1090.6
127.5°	1169.3	1190.0	1182.7	1174.7	1169.3
130°	1246.1	1270.1	1266.8	1262.8	1255.4
132.5°	1332.2	1350.9	1352.2	1342.9	1337.5
135°	1406.3	1426.9	1431.0	1428.9	1423.6
137.5°	1489.0	1505.7	1509.0	1507.7	1499.7
140°	1561.8	1578.5	1587.8	1587.8	1580.5
142.5°	1636.5	1653.2	1658.5	1660.5	1653.2
145°	1707.3	1720.6	1731.3	1733.3	1726.0
147.5°	1770.7	1787.4	1795.4	1798.7	1791.4
150°	1836.1	1847.4	1854.8	1860.8	1854.8
152.5°	1894.1	1905.5	1914.8	1922.2	1914.8
155°	1952.2	1957.5	1963.6	1972.9	1966.9
157.5°	2002.3	2006.3	2009.6	2023.0	2013.6
160°	2047.0	2051.0	2053.0	2064.3	2056.3
162.5°	2088.4	2088.4	2090.4	2103.0	2093.7
165°	2123.7	2121.7	2121.7	2135.1	2125.7
167.5°	2155.8	2149.8	2149.8	2163.1	2153.8
170°	2179.8	2174.5	2172.5	2185.8	2174.5
172.5°	2196.5	2191.1	2189.1	2202.5	2191.1
175°	2209.8	2204.5	2200.5	2213.8	2202.5
177.5°	2217.2	2211.8	2207.8	2219.2	2207.8
180°	2213.8	2213.8	2213.8	2213.8	2213.8

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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	11.48	12.37	12.41	13.32	14.55	11.05	11.94	11.98	12.89	14.12
	3H	13.13	13.93	14.08	14.89	16.14	12.66	13.46	13.61	14.42	15.67
	4H	13.72	14.47	14.68	15.43	16.70	13.25	14.00	14.21	14.97	16.23
	6H	14.11	14.81	15.08	15.78	17.05	13.64	14.34	14.61	15.31	16.58
	8H	14.21	14.88	15.19	15.86	17.13	13.75	14.41	14.72	15.39	16.66
	12H	14.26	14.89	15.24	15.87	17.17	13.79	14.42	14.77	15.40	16.69
4H	2H	11.94	12.69	12.90	13.66	14.92	11.60	12.35	12.56	13.31	14.58
	3H	13.80	14.43	14.77	15.42	16.70	13.41	14.04	14.38	15.03	16.31
	4H	14.51	15.08	15.49	16.07	17.37	14.11	14.68	15.09	15.67	16.97
	6H	15.02	15.51	16.01	16.52	17.82	14.61	15.11	15.61	16.12	17.42
	8H	15.17	15.63	16.16	16.63	17.94	14.76	15.22	15.75	16.22	17.54
	12H	15.24	15.65	16.25	16.67	17.99	14.82	15.24	15.83	16.26	17.58
8H	4H	14.70	15.17	15.70	16.17	17.48	14.35	14.81	15.34	15.81	17.13
	6H	15.33	15.71	16.35	16.76	18.07	14.97	15.35	15.99	16.40	17.71
	8H	15.54	15.88	16.57	16.91	18.24	15.18	15.52	16.21	16.55	17.88
	12H	15.67	15.97	16.70	16.99	18.37	15.29	15.59	16.33	16.62	17.99
12H	4H	14.69	15.11	15.71	16.13	17.45	14.34	14.76	15.36	15.78	17.10
	6H	15.36	15.69	16.39	16.73	18.06	15.01	15.35	16.04	16.38	17.71
	8H	15.59	15.89	16.63	16.92	18.29	15.24	15.54	16.27	16.56	17.94